Published Monthly, Nine South Clinton Street, Chicago, U. S. A.

LIBRARY
RECEIVED
SEP 13 1920
U. S. Department of Agriculture

American Journal of VETERINARY MEDICINE

Vol. XV JULY, 1920 No. 7

Table of Contents, Page 3 Buyers' Index, Page 2

When better Anti-Hog-Cholera Serum is made

Pitman-Moore

will make it.

Purity Biologics

Reg. U. S. Pat. Off.
Trade Mark

ANNOUNCEMENT

Purity Sterile Abortion Vaccine for Cattle.

Purity Clear Concentrated Anti-Hog-Cholera Serum

Blackleg Aggressin (Germ-Free Liquid Vaccine)

PURITY BIOLOGICAL LABORATORIES
SIOUX CITY, IOWA

Who Makes Them?

Are the biologics that you depend upon made **personally** by a true master of the science?

Or do you get products turned out by laboratory assistants?

This is the most important question for you to consider, Doctor. You need not be satisfied with only fair results—you should have the BEST.

With Zell-Straub Biologics come twenty years' international experience and the personal services of the scientist who produces Zell-Straub Products.

As a truly scientific institution, giving personally-made products and a helpful personal laboratory service, Zell-Straub Laboratories stand distinctly alone in the field.

Zell-Straub Laboratories
Masonic Temple Chicago, U.S.A.

ZELL-STRAUB PRODUCTS "Consider Who Makes Them"

It Exerts A Specific Action!

Jen-Sal

ELIXIR YOHIMBEHE COMPOUND

SEXUAL IMPOTENCE

Is one of the most serious factors in the pure-bred business.

Both sexes respond to Jen-Sal Elixir Yohimbehe Compound treatment including:

Horses, Cattle, Sheep, Goats, Swine, Dogs, Cats, etc.

Per 1-pound Bottle (1 treatment for large animal).....$10.00
Per ½-pound Bottle (1 treatment for hog or sheep)..... 5.25
Per ¼-pound Bottle (1 treatment for small animal)..... 2.75

Write for Complete Literature

THE JENSEN-SALSBERY LABORATORIES

(Incorporated)

KANSAS CITY, MISSOURI

ANTHRAX

AS every veterinarian knows, this is one of the most virulent of all diseases of domestic animals. Protect your clients' stock against it by use of these potent, reliable, rigidly tested products:

Anthraxoids

For immunizing cattle, sheep, horses and mules.

Anthraxoids are accurate doses of Anthrax Spore Vaccine in convenient pill form.

ANTHRAXOIDS SINGLE.

Bio. 840. Vials of 10 Anthraxoids.
Bio. 842. Packages of five vials of 10 Anthraxoids (50 doses).

ANTHRAXOIDS DOUBLE.

Bio. 850. Packages of one vial each of 10 Anthraxoids No. 1 and No. 2.
Bio. 852. Packages of five vials each of 10 Anthraxoids No. 1 and No. 2 (50 double doses).

ANTHRAXOIDS FOR SHEEP.

About one-fourth the strength of Anthraxoids Single for the larger animals.

Bio. 857. Packages of one vial of 10 Anthraxoids.

Anthrax Serum

For prophylactic and curative treatment of all animals.

Bio. 710. Bottles of 30 mils.
Bio. 712. Bottles of 100 mils.

Anthraxoids—Anti-Anthrax Serum

Double vaccination with Anti-Anthrax Serum and Anthraxoids (simultaneous treatment).

Bio. 855. Packages containing one 100-mil bottle of Anti-Anthrax Serum and one vial of 10 Anthraxoids No. 2.

When the disease is established in a herd, simultaneous treatment with serum and vaccine is indicated.

WRITE FOR LITERATURE.

Parke, Davis & Company

DETROIT

Buyers' Index

ACCESSORIES

Kentucky Serum Co. 66
Peoria Serum Co. 36

ANTITOXINS—BACTERINS—VACCINES

Abbott Laboratories, The 12, 13
Alexander Clear Serum Co. 4, 5, 6
Anchor Serum Co. 3rd Cover
Beebe Laboratories, Inc. 29
Betz Company, Frank S. 7
Big O Sales Co. 48
Corn Belt Serum Co. 63
Continental Serum Laboratories Co. 32
Cutter Laboratories, The 83, 84, 85
Eagle Co., Inc., The 31
Eucamphine Co., The 75
Fort Dodge Serum Co. 67, 68, 69, 70
Hygienic Mfg. Laboratories 43
Kentucky Serum Co. 66
Lederle Antitoxin Laboratories 22, 23
Mulford Co., H. K. 10
Ottumwa Serum Co. 55
Parke, Davis & Co. 1
Peoria Serum Co. 36
Pitman-Moore Co. Front Cover, 17, 18, 19, 20
Purity Biological Laboratories Front Cover, 11, 47
Quality Biologic Co. 59
Sioux Falls Serum Co. 65
Standard Serum Co. 86
Swan-Myers Company 4th Cover, 8a, 8b, 8c, 8d
Swan-Williamson Co., J. C. 61
Waterloo Serum Laboratories, The 81
Zell-Straub Laboratories 2nd Cover

BLACKLEG—FILTRATE, AGGRESSIN, PELLETS

Alexander Clear Serum Co. 4, 5, 6
Betz Co., Frank S. 7
Big O Sales Co. 48
Corn Belt Serum Co. 63
Cutter Laboratories, The 83, 84, 85
Fort Dodge Serum Co. 67, 68, 69, 70
Purity Biological Laboratories Front Cover, 11, 47
Standard Serum Co. 86

CLASSIFIED ADVERTISING

Positions, Locations, For Sale, etc. 74

CLIPPING MACHINES

Gillette Clipping Machine Co. 80

EAR MARKERS

Stoll, M. H. 65

INSTRUMENTS

Big O Sales Co. 48
Haussmann & Dunn Co. 32
Sharp & Smith 9
Stalker Mfg. Co. 45
Strasenburgh Co., R. J. 44

HOSPITAL EQUIPMENT

Veterinary Specialty Co. 37

PHARMACEUTICALS

Abbott Laboratories, The 12, 13
Big O Sales Co. 48
Bischoff Co., Inc., Ernest 73
Carter-Luff Chemical Co. 73
Chilean Iodine Producers 65
Eagle Co. Inc., The 31
Eucamphine Co., The 75
Jensen-Salsbery Laboratories 2nd Cover
Meyer, Theodore 57
Searle & Co, G. D. 38
United Chemical Co. 50
Westmoreland Chemical & Color Co. 49
White, Mark 57

ANTI-HOG CHOLERA SERUM

Alexander Clear Serum Co. 4, 5, 6
American Serum Co. 34
Anchor Serum Co. 3rd Cover
Aurora Serum Co. 27
Betz Co., Frank S. 7
Big O Sales Co. 48
Capital Serum Co. 69
Continental Serum Labor. Co. 32
Corn-Belt Serum Co. 63
Cutter Laboratories, The 83, 84, 85
Eagle Co., Inc., The 31
Elmore Serum Co. 38
Fort Dodge Serum Co. 67, 68, 69, 70
Goebel Serum Co. 77
Guilfoil Serum Co. 26
Hamilton Chemical Co. 54
Kentucky Serum Co. 66
Lederle Antitoxin Laboratories 22, 23
Missouri Valley Serum Co. 58
Ottumwa Serum Co. 55
Peerless Serum Co. 24
Peoria Serum Co. 36
Pitman-Moore Co. Front Cover, 17, 18, 19, 20
Purity Biological Laboratories Front Cover, 11, 47
Royal Serum Co. 4th Cover
Sihler Serum Co. 71
Simonson Serum Farm, The 14
Sioux City Serum Co. 3rd Cover, 15
Sioux Falls Serum Co. 65
Standard Serum Co. 86
Universal Serum Co. 33
United Serum Co. 16
Waterloo Serum Laboratories, The 81

SPECIALTIES

Fort Dodge Serum Co. 67, 68, 69, 70

SYRINGES

Beckton Dickinson & Co. 21
Kentucky Serum Co. 66
Ottumwa Serum Co. 55
Peoria Serum Co. 36
Randall-Faichney Co., Inc. 51
Sioux Falls Serum Co. 65
Standard Serum Co. 86

VETERINARY COLLEGES

Indiana Veterinary College 54

Table of Contents

FEATURE ARTICLES—
Quacks I Have Met; Their Cause and Methods, by M. V. Burgett, Worden, Ill. 301
Significance of Autopsies at Shipping Centers, by J. C. Stokes, Oak Glenn, Ill. 313
Plant Poisoning, by George H. Glover, Ft. Collins, Colo. 315
EDITORIAL—
Taking the Graft Out of Swine Vaccination 317
The Veterinary Corps in the New Army Bill 319
Examinations for Commissions in the Army 321
A Veterinary History of the War 321
BOOK REVIEWS 323
Sheep Diseases, by E. T. Baker.
DEPARTMENT OF LABORATORY DIAGNOSIS—Edited by C. A. Zell 324
Microscope Reveals Actinomycoses; Bacterins from Pyogenic Organisms Indicated; Further Examination Necessary to Account for Diarrhea; Pericarditis Does not Account for History and Symptoms; Operation Advised for Sarcomatous Growth; Diagnosis Impeded by Poor Condition of Specimen; Diphtheria Fatal to Young Chicks.
DEPARTMENT OF CATTLE PRACTICE—Edited by J. F. Devine 328
Sterility Technic; Fatal Diarrhea of Cattle; Ergot Poisoning Indicated.
DEPARTMENT OF SWINE PRACTICE—Edited by A. T. Kinsley 331
Meat not Injured by Peri-intestinal Emphysema; Many Causes Lead to Posterior Paralysis; Trouble Due to Larval Form of Ascaris Suis; Should Week-Old Pigs Be Vaccinated?
DEPARTMENT OF SURGERY—Edited by L. A. Merillat 333
Fly Repellent; Borna Disease; Delayed Shock; Horse Coming Back.
DEPARTMENT OF LIVE STOCK POISONING—Edited by L. H. Pammel 334
Acorn Poisoning; Cornstalk Poisoning; Ragwort Poisonous; Poisoning from External Use of Alcohol.
POINTED OPINIONS—
Wherein the French Veterinarian Excels the American Veterinarian, by C. B. Perkins, San Antonio, Tex. 339
$6,000 Horse Ambulance Installed by Los Angeles S. P. C. A. 341
Is Dispensing More Profitable than Prescribing, by A. R. Galbraith, Garfield, Wash. 342
Common Sheep Diseases, by L. C. Kigin, Lafayette, Ind. 343
Strangulation Hernia Fatal After Nine Days, by A. M. Anderson, Luverne, Minn. 345
Seeing Things Notwithstanding the 18th Amendment, by P. L. Talbot, Sioux Rapids, Ia. 345
Matters Affecting B. A. I. Work 346
Army Commissions for Veterinarians, War Pictures, Insurance, by A. A. Leibold, Kansas City, Kan. 347
Wire in Esophagus Safely Removed, by W. A. Harris, Tuscaloosa, Ala. 347
Tri-States Veterinary Club Meeting, by J. F. DeVine, Goshen, N. Y. 347
Direct Opening Between Rumen and Pericardial, by S. W. Haigler, Bellflower, Ill. 348
Team Work Between Veterinarian and County Agent Urged, by G. F. Baumeister, Freeport, Ill. 349
Toxic Gastro Enteritis in Equine, by I. B. Boughton, Champaign, Ill. 351
All Vermifuges Fail in a Young Mare, by S. W. Haigler, Bellflower, Ill. 351
Refused to Operate Upon Moribund Patient, and Rupture of the Uterus, by B. L. Terrell, Dresden, Tenn. 352
Experiences in Tuberculin Testing, by C. C. Walker, Helena, Mont. 352
Water and Salicylic Acid for Colic, by W. R. Morgan, Eminence, Ky. 353
United States Army Citation 353
Blackleg Cured by Serum, by W. R. Morgan, Eminence, Ky. 354
Turpentine Intravenously Successful in Purpura, by F. B. Ford, New Orleans, La. 354
MATTERS OF CURRENT INTEREST 25

DISTINCTIVE FEATURES OF ALEXANDER CLEAR ANTI-HOG-CHOLERA SERUM

Quality in the Alexander Biological Laboratories is the foundation upon which our business is built.

There are several features about Alexander Clear Anti-Hog-Cholera Serum not found in any other Anti-Hog-Cholera Serums.

We were the first to manufacture commercially Clear Anti-Hog-Cholera Serum in the United States. Today we are the only company producing a clear virus.

The processes we use are exclusive with us and letters of patent have been applied for for these processes.

We absolutely keep each individual bleeding separate until after post-mortem of the hog.

By reason of this we can and positively do destroy all the bleedings from hogs showing the slightest sign of infection after post-mortem, EVEN THOUGH THESE BLEEDINGS HAVE ALL BEEN SUBJECTED TO OUR STERILIZING PROCESS.

This procedure is possible only through this patented process, and is an added safeguard to you and your clients.

The best Anti-Hog-Cholera Serum is a clear serum and the best clear serum is the Alexander Clear Serum.

If you will but once use it, this fact will be self evident.

E. R. Alexander

AMERICAN JOURNAL of VETERINARY MEDICINE

Copyright 1920 by The American Veterinary Publishing Co., Published Monthly.

No. 9 SOUTH CLINTON ST. CHICAGO, U. S. A.

VOL. XV. JULY, 1920 No. 7

Quacks I Have Met; Their Cause and Methods

By M. V. BURGETT, Worden, Illinois

VERY soon after graduating from college, I met my first quack, and I have been meeting them, off and on, ever since. Needless to say I have also met many quackish clients. Nearly all clients, at least such has been my experience, have some quackish tendencies. The belief that they were born with an inherent medical knowledge is fast-fixed in many stockmen. Quackish traits break out and show when least expected, even in some of the better educated. It has been said that necessity is the mother of invention; she is also, without doubt, the progenitor of most quackish treatments; but ignorance, not necessity, is the mother of quacks. A stockman treats his own horse. If he is a genuinely ignorant fellow, and the first few attempts on his own horse are successful, he, a living exemplification of the old adage, "A little knowledge is a dangerous thing," may start out as a regular quack to treat his neighbor's horses.

Most quack treatments are originated by the stockman under the urge of, what he at least considers to be, extreme necessity. He is either unable, or too stingy to get a veterinarian, or too ignorant, or too egotistical, thinking he can do as well himself. His horse is sick. Something has to be done. It would never do to let him die in peace. Impelled by a consuming desire to circumvent nature, the stockman, in his dire necessity, grabs the vinegar bottle, or the baking soda, or whatever happens to be handy, and administers *ad. lib.*

After administering the second dose of the turpentine, or the varnish, or whatever the medicament happens to be, the pain begins to subside, and the horse becomes quieter, and soon recovers. The stockman looks at the varnish, what there is left of it, with new respect. Never had he known that it possessed such magic curative power; he must remember this, and always keep some on hand. Perhaps he had called a veterinarian and merely felt impelled to do something until he arrived. The veterinarian drives up. The stockman hastily hides the bottle of varnish (The doctor must not discover his precious secret), and goes out to meet him, telling him that his horse has recovered and that he doesn't need his services after all, thinking all the while that maybe the doctor will let him off easy in the matter of charges if he doesn't have to get out of his conveyance. Next time, of course, the varnish gets a good tryout before the doctor is called. Even if the results are disastrous the second time, the stockman does not lose faith in his remedy. He merely thinks that the case wasn't quite adapted to the treatment, and goes on believing that in "Peterman's varnish" he has a specific for nearly all ailments of the horse. I am reminded of the story of John Bowers:

John had a sick horse. He remembered that Indian Charley, up the road a ways, had had a sick horse exhibiting similar symptoms a few days before. Jumping on a horse, he rode rapidly over to Charley's place. Charley was in the barnlot. John called to him, "Charley, what'd you give your horse the other day when he was sick?" Charley, being an Indian, was a man of few words. "Tablespoonful aconite," he answered laconically. John turned his horse and hastened home to give his horse some aconite. In a short while his horse was dead. Disconsolately, he rode slowly back to Charley's. "Charley, what did you say you gave your horse

DOC VETTER

HE'S NOT GONE SO FUR BUT WHAT A LITTLE SCIENTIFIC TREATMENT WILL FIX HIM ALLRIGHT
1
KEEP HIM FACIN THIS WAY AN' JEST WHERE HE IS.
2
STIDDY NOW. THIS IS SOMETHIN' THAT HAS TO BE HANDLED JEST SO
3
WE INJECT THE SERUM HYPODERMICALLY IN THE LARGE VEIN OF THE NECK AN'—
4
HOL' ON
5
6

Courtesy, Country Gentleman.

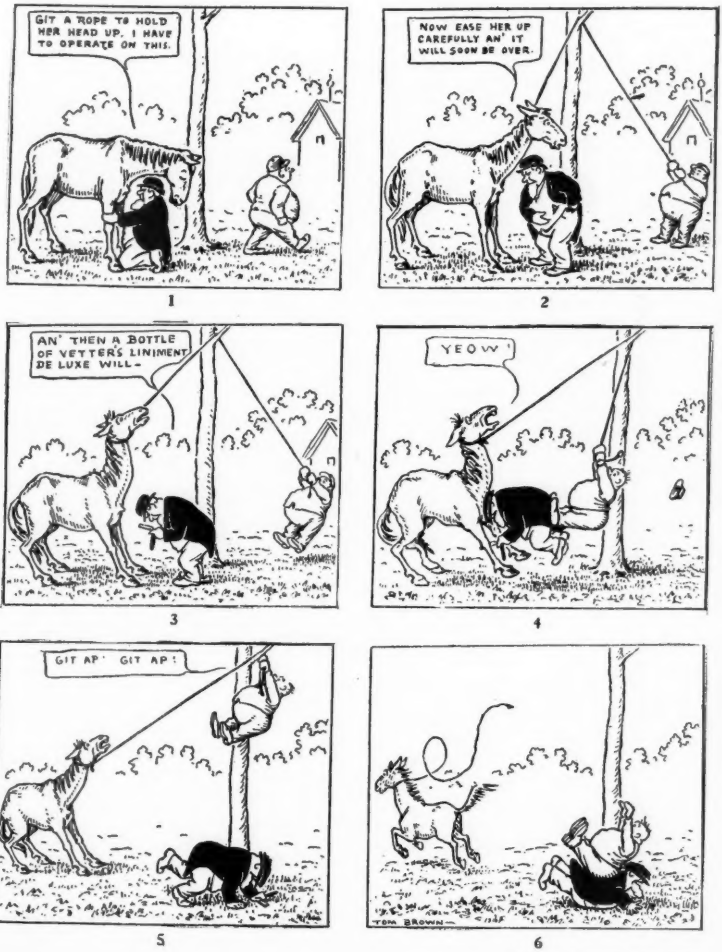
Intraperitoneal Injection.

when it was sick tuther day?" "Tablespoonful aconite," repeated Charley. "Well," responded John, "It killed mine." "Mine too," said Charley, with great solemnity.

Knowledge of Human Nature Essential.

In college we are taught a great deal about surgery, medicine, pathology, "bugology, etc."; in short, we are taught something about everything pertaining to the practice of veterinary medicine, except the one most important thing of all—human nature. This subject is barely broached, if touched upon at all, yet it is the most essential thing. Men have practiced veterinary medicine quite successfully (financially) with very little knowledge of surgery, medicine, pathology, or of anything at all, except human nature; this they must

OLD DOC VETTER


GIT A ROPE TO HOLD HER HEAD UP. I HAVE TO OPERATE ON THIS.
1
NOW EASE HER UP CAREFULLY AN' IT WILL SOON BE OVER.
2
AN' THEN A BOTTLE OF VETTER'S LINIMENT DE LUXE WILL—
3
YEOW!
4
GIT AP! GIT AP!
5
6
TOM BROWNE

Courtesy, Country Gentleman.

have a knowledge of, or, no matter what else they know, they are doomed to failure. With the quack, a knowledge of human nature comprises almost his whole armentarium—almost his whole stock in trade; and his ignorant beliefs coincide so well with the superstitions or misinformation of many stockmen, that there is a wonderful tendency to harmony in their relations. However, the moment a strictly ethical, skilled veterinarian tries to instill some truly scientific knowledge into them, most stockmen are about as receptive as a nigger-head boulder, and, of course, friction ensues. I do not mean that one should not attempt to educate one's clients in the right way; but I do think that what Carlyle said well applies: "To attempt to combat the ignorance of the people is like trying to beat back a fog with a whip."

The first quack that I had the pleasure to meet after graduating was a comical old fellow whose name closely approximated "Turpin Hydrate," and I nicknamed him that. Our meeting came about one Sun-

"Turpin Hydrate."

day morning in early spring. A cow was ill of milk fever on a farm about fifteen miles out in the "sticks". Upon arrival at the farm my partner and I were met by a guide who conducted us to a remote spot nearly a mile from the house, where we found the cow in a comatose condition, and about fifteen of the neighbors gathered around a two-gallon jug of whiskey, at a little distance, were rapidly becoming so, also. "Turpin Hydrate," with his sleeves rolled up to his arm-pits, rushed to meet us exclaiming "God I'm glad you got here! I've managed to keep her alive until you come!" We did not inquire how he had accomplished this, but hastened to treat the cow. Later, we asked him how he had kept the cow alive while waiting for us; and he said that he had rubbed her with salt water. The cow was considerably bloated, and, after giving her a dose of glonin and inflating her udder, I tapped her. As I plunged in the trocar and removed the stilet, letting the gas escape with a hiss, one of the crowd, an old ex-confederate soldier, exclaimed, "Hit the right spot the first crack out of the box!" He then went on to explain that I reminded him of a famous army surgeon whom he had seen operate in St. Louis. My joy at being lauded was sadly tempered with the knowledge that it would have been impossible to have missed that rumen at all, unless I had turned the cow over on the other side.

While we were waiting for the cow to revive, "Turpin Hydrate" received a call, and went puffing away with the small boy who had come for him. After about an hour had elapsed, and the cow had not shown any signs of returning to health, the owner, who probably thought that she was a "goner", and who had been imbibing quite freely of the whiskey, became hysterical, and, with tears streaming down his cheeks and with sobs in his voice, bemoaned the fact, that, only the week before, he had refused an offer of eighty dollars for the cow. A few more drinks from the jug, however, caused him to become more reconciled to his misfortune; and he was soon trying to lead the crowd in a song, after telling us that he had lots more cows.

"Turpin Hydrate" returned in about an hour with his sleeves still rolled up to his arm-pits. He was puffing and panting more violently than ever, and alternately fanning himself with his hat and wiping the sweat off his face with a red bandana. He seemed too much fatigued to talk; but, after he had rested a little, and had had a couple of long pulls at the jug, he revived sufficiently to tell us about the case that he had visited. He let us know at once that it had been one of the worst cases he had ever seen in all his experience, and, according to his own statements, his experience had been both extremely long and varied. He said, "Boys, it sure was some nasty case. A young heifer was having a calf, and, when I got there, it was about half born. Boys, it's a fact, that heifer had threshed that calf around there in the woods until she had worn the saplings clear off as large as that one there." And he pointed to a hickory not less than

eight inches through. It certainly was a remarkable occurrence; unless the heifer was violating all precedent by giving birth to a cross-cut saw.

Too Free With Caustics

A week or two afterward, I tried to qualify for the quack class myself by pulling off a couple of rather raw stunts. A young farmer brought to the office a horse whose ears were covered with small warts. I applied a stick of caustic to them quite freely—too freely, I suppose. At any rate, the farmer brought the animal back in about a week, and there was a hole big enough to stick your little finger through where each wart had been. The holes had much the appearance of bullet holes; and the animal looked as though he had been in the extreme van of the "Charge of the Light Brigade".

DOC VETTER

A BAD CASE OF THE SNUFFLES.
HOLD HIS HEAD UP NOW SO'S I KIN GIT THE TAR ON HIS NOSE.
UP WITH HIS HEAD A LITTLE HIGHER
HOL' ON - HOL' ON
NOW YOU KEEP HIM IN A COOL DRY PLACE AN' I'LL DRAP IN TOMORROW AN' SEE HOW HE'S PROGRESSIN'.
1
2
3
4
5
6

Courtesy, Country Gentleman.

That same week a widow, who lived a few miles from town, called us to prescribe for a horse that had a large swelling on the withers. We decided not to operate, but to attempt to drive the swelling away with a counter-irritant, so we used a bottle of 4X liniment on it. This liniment contains a liberal amount of bichlorid. Unthoughtedly, I made the first application with my bare hand (it should be applied with a feather), and left the rest of the bottle with directions for the widow to apply it once daily. When the skin of my hand commenced to peel off during the next few days, I, at first, thought that it was ivy poisoning, but later decided that the liniment was responsible. The thought occurred to me, that if one application served my hand that way, what must be the condition of the widow's hand? I was a little afraid to face the issue, so, when, one morning, the widow drove up in front of the office I dived out the back door and across the alley to a pool-hall, leaving my partner to explain as best he could. I played pool all morning, but was a little off my game, due to trying to keep one eye on the pool-balls and the other on the back door. At noon I ventured cautiously back to the office, and found that my fears had been groundless, for the widow's hand had been tenderer than mine, and the 4X had burned it immediately, so she had washed her hand and applied the liniment with a brush thereafter.

A month or so later we came across a client of quackish tendencies, who instead of being proud of his uncanny knowledge, blamed it on his wife. He called us to attend a case of impaction in a mare, and, when we arrived, we asked if he had given her anything. He hesitated, and finally, with a sheepish look, said, "Yes, my wife said that she had heard that peach leaves and chicken manure boiled together were good for colic so she fixed up some and I gave it to the mare." The mare evidently had a good constitution, for she recovered in spite of the treatment.

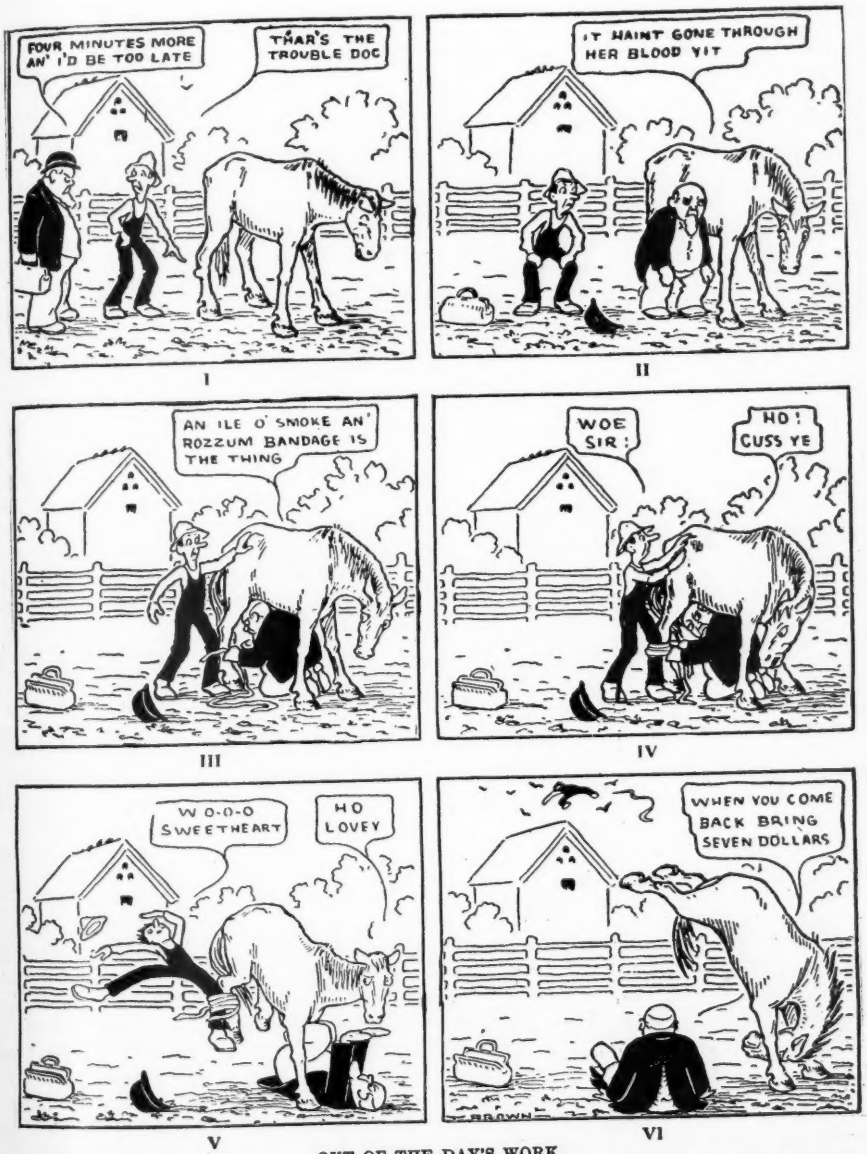
One evening I was called to see a two-months old colt suffering from tetanus. I held out no hope of its recovery; but, at the request of the owner, gave it an injection of anti-tetanic serum, and left a bottle of medicine to be administered. When I left, I told the owner, that, if the colt was the least bit worse the next day, he had better kill it. He killed it the next day, and then came in and told me that he had discovered a sure way to cure lock-jaw. For a moment I thought that the colt had miraculously recovered, and was about to claim that the anti-toxin must have cured it; but he interrupted to tell of his medical discovery. His treatment was very simple. He said that he had killed the colt by hitting it on the head with an ax. "And when it fell," he continued, "the jaws were plumb relaxed." "Yes, but the colt was dead then, too," said I. But, this he couldn't seem to understand. He seemed to think that hitting the animal in the head was the proper cure for lockjaw; that the same blow would kill the horse didn't faze him. He seemed to think, that it was merely a matter of gaging the force of the blow, just hard enough to cure without killing. As I couldn't persuade him out of it, after arguing with him for an hour, I excused myself and went around back of the office, where I tried to bite a ten-penny nail in two, to get my mind back to normal. I have never been just the same since.

"Magic Healing Oil" Works Miracles

The next quack I met was a wrinkled, dirty, sour-looking, old fellow who not only practiced, but also ran a laboratory, in which he manufactured "magic healing oil". This oil must have been very costly stuff; for once while "Doc" was making a call, he set a small black grip filled with the oil down behind a mule, and the mule kicked it over. "Doc," moved at the sight of the destruction of so much valuable property, exclaimed excitedly, "God, there goes seven hundred dollars' worth of medicine!" "Doc" made no effort to conceal the wondrous healing power of this oil that he manufactured. In fact, if urged only a very little, he would admit it—by the hour. "Doc" once silenced a bunch of skeptics, who seemed to doubt its efficacy, by cleverly relating an illuminating incident that had occurred a few days before. So apt was the illustration, and so forcefully did it prove the miraculous healing power of the oil, that the critics were silenced, and slunk away. "Doc" related that, while he was making a batch of the oil in his laboratory, and had spilled some of it on the floor, his dog, bitten by a flea and trying desperately to rid himself of it, came into the laboratory and slid on his

posterior parts right through the patch of oil on the floor. "And the next day, boys," continued "Doc", "just as true as I'm a sittin' here, I saw that dog a twistin', and a turnin' and a strainin, and a fussin', and when I examined him, I'll be doggoned if that oil hadn't healed him up clean. I had to operate, and quick too. I wouldn't a lost that dog for a cool hundred, for he's the best coon-dog in this county."

I was once called in consultation with this quack, on a case of forage poisoning.



OUT OF THE DAY'S WORK

Courtesy, Country Gentleman.

"Doc" admitted to the owner, that he didn't know what was the matter with the horse; so the owner called me. I diagnosed the case, prescribed treatment and left. After I had gone, "Doc" told the owner, that now that he knew that it was forage poisoning, he had a wonderful treatment. He said that, in forage poisoning, the animals had water on the brain, and that he knew just how to remove it. The owner continued my treatment, but let "Doc" go ahead too. "Doc" got a tube, ran it up the horse's nostril, blew some irritating powder into the nose; and, soon, water began to drip from the nostrils. "Doc" said, "See, boys, thar she comes; brain'll be as dry as powder in thirty minutes." The horse recovered; and "Doc" got all the credit for the cure. Such are the rewards of originality and an understanding of human nature.

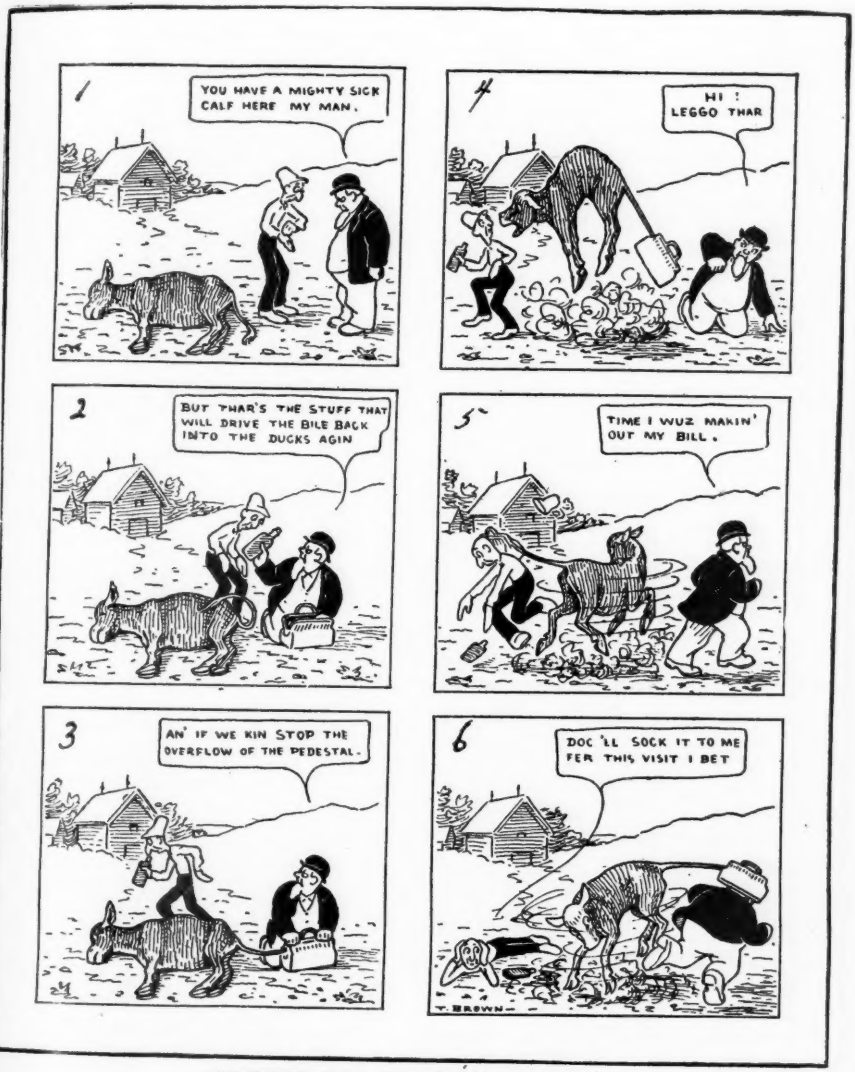
Educated "Know-It-All" Treats Tetanus

I once knew a quack, who was wealthy and supposed to be educated. It has been said, that "education maketh a full man." It did with this man, at any rate. It made him full—of bunk. He was a graduate of the agricultural department of a state university. One old-time veterinarian on the faculty of this school, lectured to the students of the agricultural classes on veterinary science. Whether he filled them all with quackish notions, I know not; but he certainly filled this particular fellow clear up. This quack owned and operated two large farms, and dealt in pure-bred stallions and mares, many of which he imported. The foreman on one of the farms called me one morning. Arriving at the farm, I found that the owner was absent, being at his other farm. I examined the sick animal, an imported Shire mare heavy in foal. She had a rapid, almost imperceptible pulse, a temperature of over 107° F., no peristalsis, great prostration, deeply injected membranes; and she walked incessantly back and forth in the rather long stall in which she was confined. I made a diagnosis of enteritis, and, when the owner called on the phone from the other farm, I made an unfavorable prognosis. "Well, stay there," said he, "and do what you can until I come." I did. When he arrived, I was doing what I could at the dinner table. He had already been in to see the mare before he came to the house. When he came in, he asked, "Doctor, what did you say was the matter with that mare?" I answered, "Enteritis." He drew a long face at this, and said, "Well, well, Doctor, I can't agree with you there." "Why" said I, "what do you think is the matter with her?" I nearly fell off my chair when he answered, "Lockjaw." I felt somewhat relieved, in a way, too, for, while I felt fairly sure (I had not been out of school long when this occurred) that it was enteritis, I was much, very much, more positive that it wasn't lockjaw. Of course, we argued the matter; he finally dug up a book on veterinary science that his old professor had written (it was about 50 years out of date); but, even then, he couldn't convince me that it was lockjaw. Finally, I said, "Well, I suppose that you would rather I didn't go ahead with my enteritis treatment?" He agreed that he would rather I didn't; and, as I wouldn't change to a lockjaw treatment, he said that he would call Doctor McKillip of Chicago in consultation. I said, "Sure, go ahead." (I was glad of an opportunity to see so famous a veterinarian in action.) Dr. McKillip promised to come on the next train, and we were to meet him in Joliet. As it would be at least a couple of hours before he would arrive, the quack thought he would start treatment for lockjaw before he came. He looked in his little old book again and read the treatment for lockjaw. The book was so old, antitetanic serum wasn't mentioned. Then he led the mare out of the comparatively cool basement stall and tied her in a little low tin-roofed shed and shut all the windows and the door, making it dark and also excruciatingly hot. He put two ounces of potassium bromid in a three-gallon bucket of water and placed it before her. She didn't drink any of it, so she was unharmed. Doctor McKillip missed the first train, and we went back to the farm between trains to see how the mare was getting along. While we were looking at her, she fell dead. When she fell, the quack said, "Well, well, it can't be lockjaw after all; she died too quick." We held an autopsy and found—enteritis.

I was once called to a farm near a little town where there was an M. D. but no veterinarian, practicing. This M. D. treated animals as well as people. The

fellow who called me was very "sore" at him; for he had called the Doctor to prescribe for a pig with all-around unsatisfactory results. The doctor, after looking at the pig as the owner chased it around the pen, had ordered that liniment be rubbed over the entire surface of the pig three times daily. The owner said that it was quite a chore to medicate the pig properly. The pig died in spite of the strenuous labors of the owner. I have often thought since, that this M. D. must have had a large, hearty sense of humor, which was active and in good working order at the time.

An old lady, a widow, once called me to


1
YOU HAVE A MIGHTY SICK CALF HERE MY MAN.
4
HI ! LEGGO THAR
2
BUT THAR'S THE STUFF THAT WILL DRIVE THE BILE BACK INTO THE DUCKS AGIN
5
TIME I WUZ MAKIN' OUT MY BILL.
3
AN' IF WE KIN STOP THE OVERFLOW OF THE PEDESTAL.
6
DOC 'LL SOCK IT TO ME FER THIS VISIT I BET
T. BROWN

ANOTHER CALL FROM DOC VETTER

Courtesy, Country Gentleman.

see a sick cow. On either side of her lived a quack. The first one that she had called said that the cow had "hollow-horn," and he wanted to bore a hole in the horn and pour turpentine into it. About this time the quack who lived on the other side came over and butted in; he pronounced the malady to be "wolf-in-the-tail," and wanted to split the tail and bind salt and pepper up in it. The old lady herself had been inclined to think that the cow had "lost her cud." Following what must have been an interesting argument, I was called in to settle the matter. When I arrived, each of them tried to win me over to his view; but I feared the consequences of agreeing with either of them, and pronounced the malady, impaction of the rumen.

Used Age-Telling Instrument

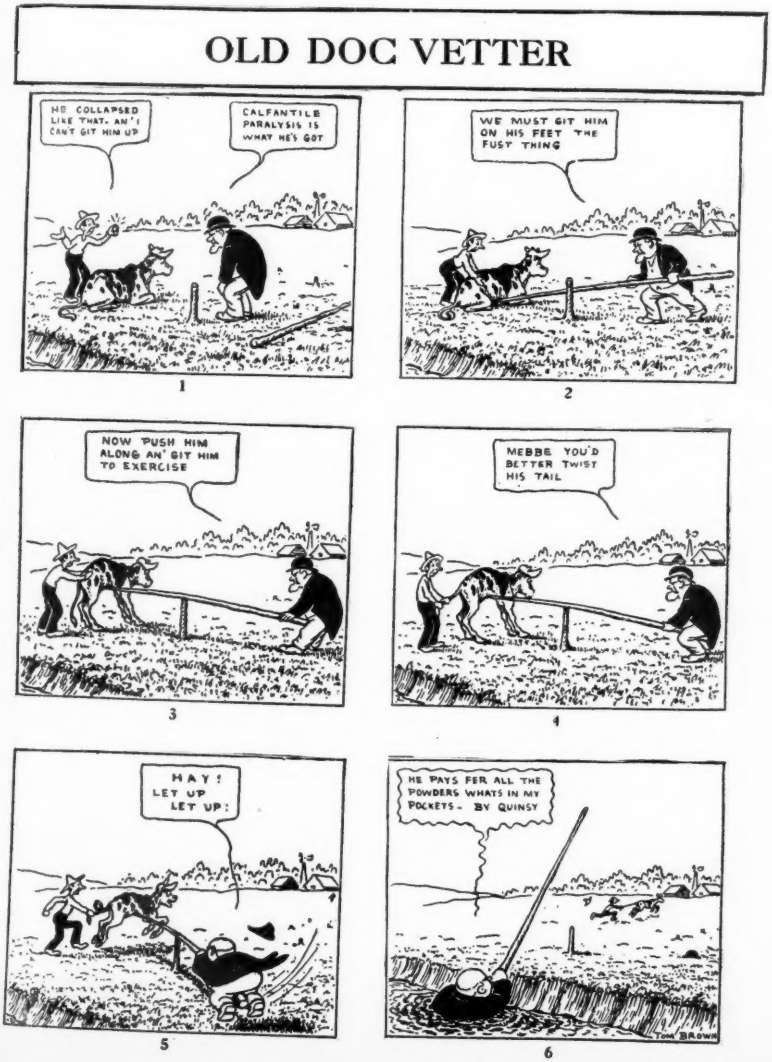
A company owning a number of mines in this section of the state employed a quack to inspect the mules at their mines. He was to cull the bad ones out, and replace them with good young mules. When he arrived at the mine he culled out a couple of mules and replaced them with a pair that looked rather second-hand, or "moth-eaten," so to speak. The barn-boss at this mine, rather a shrewd horseman, didn't like the looks of either the mules or the quack, and inquired into the antecedents of both. The quack, who was a boisterous old bluffer, and half blind in the bargain, said, that he had his "veterinary papers," and that he would bring them along and show them to the barn-boss the next trip; but, when he came again, he had forgotten them. The barn-boss asked him how old the mules that he had purchased were; and he said, that he didn't have his instrument with him, but that he would bring it the next time he came, and then he would test their ages.

The barn-boss, never having heard of an age-telling instrument before, was, naturally, very anxious to see it. So, when the quack came back and called for the mules to be brought out on the floor to have their ages tested, the barn-boss watched proceedings closely. The old quack, however, didn't seem anxious for him to see the procedure, for he turned his back to unwrap the paper from around the age-telling instrument, and, trying to shield his actions with his body, he ran the instrument up into the mule's mouth, holding it there a little while and then pulling it out and looking at it, he said, "Well, well, just six years old," and looking more closely at the instrument, "Yes, that's it. She'll do. Just six even." The barn-boss was rather surprised, for he had an idea that the mule was at least twenty. The old quack, with the same show of secrecy, tested the other mule, and found it to be young also, then he turned his back and wrapped the instrument in the paper again; but, after wrapping it, he laid it on a bench and the barn-boss immediately engaged him in an absorbing conversation (flattery of the quack's ability), and managed to cause him to forget the instrument and to entice him out of the mine to see a mule on top. Then the barn-boss hurried back to see the instrument. It was just a plain common rusty old float. The quack never came back for it, so the barn-boss has it yet.

A Man of Many Parts

The most remarkable quack that I ever knew practiced in a little town near Chicago which boasted no veterinarian. The people were mostly city people, who had but lately moved out. Few of them had more than the most cursory knowledge of animals; yet nearly all of them had purchased a few cows and, maybe a horse or two. You can readily see that it made a good field for a quack. No matter what he did, they, in their ignorance, were likely to think it all right. "Doc" got away with it pretty well in the little town, but when he branched out into the surrounding country and commenced to do work for real farmers, he often came to grief. "Doc" did not commence the practice of veterinary medicine in his infancy, nor yet in his youth; for he was 62 years of age when he first began, and had tried out nearly all the other "professions", and discarded them for various reasons. He did not slough them all in a lump, but, like a snake in the spring, discarding its skin as it feels a new one coming on, "Doc" sloughed his professions one at a time, as he felt another coming on. He had been successively a stone-mason, an undertaker, and a preacher; and, I think I am justified, without direct evidence, in stating that he had also been a lumber piler. To my mind, there isn't a doubt but that a man of his varied and numerous activities had at some period of his existence learned to pile

lumber—and right handsomely too. When "Doc" dropped his other, more or less, noble professions to enter that of veterinary science, he was a very dignified, clean-looking old gentleman. He had, probably, put on the cloak of dignity while in the undertaking business. He charged more for his services than a regular veterinarian. I always thought that he learned that in the undertaking business, also. He was a smooth talker and very condolent, a relic, probably, of his preaching activities. Upon occasion, he could use language that might aptly be described as strong, rough and picturesque, but decidedly unfitting for a preacher. This trait must have been a hangover from his stonemason days, "Doc", with all his virtues, had two faults: a poor memory, and the other, considered by "Doc" to be incon-

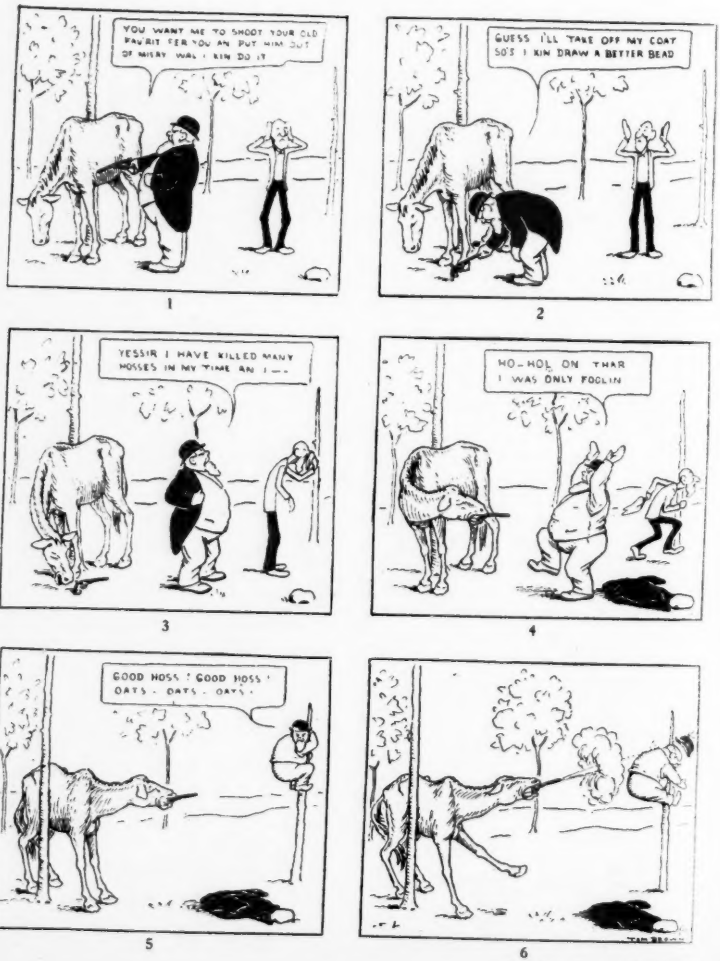

OLD DOC VETTER
HE COLLAPSED LIKE THAT- AN' I CAN'T GIT HIM UP
CALFANTILE PARALYSIS IS WHAT HE'S GOT
1
WE MUST GIT HIM ON HIS FEET THE FUST THING
2
NOW PUSH HIM ALONG AN' GIT HIM TO EXERCISE
3
MEBBE YOU'D BETTER TWIST HIS TAIL
4
HAY! LET UP LET UP!
5
HE PAYS FER ALL THE POWDERS WHATS IN MY POCKETS - BY QUINSY
TOM BROWN
6

Courtesy, Country Gentleman.

sequential and immaterial, was that he didn't know a dod-gasted thing about curing the ailments of sick animals. As to his memory, "Doc" admitted it was poor. One day I asked him what college he graduated from, and he said that he couldn't remember: he said that it was some college in Canada, and, then, immediately said that his memory was not very good any more.

A farmer in "Doc's" territory called me to see a horse with an enlargement on the jaw, about the size of an egg. I put a speculum on the horse, and extracted a decayed tooth. The owner asked if the bad tooth was the cause of the enlargement. I told him that it sure was. He cussed then, and said that "Doc" had been treating that enlargement for over a year, and had been making two trips a week and painting it with iodin. "Each time he came," said the farmer, "he took a bag

DOC VETTER


YOU WANT ME TO SHOOT YOUR OLD RAYBIT FER YOU AN PUT HIM OUT OF MISRY WAL I KIN DO IT
1
GUESS I'LL TAKE OFF MY COAT SO'S I KIN DRAW A BETTER BEAD
2
YESSIR I HAVE KILLED MANY HOSSES IN MY TIME AN I —
3
HO-HOL ON THAR I WAS ONLY FOOLIN
4
GOOD HOSS ! GOOD HOSS ! OATS - OATS - OATS -
5
6

Courtesy, Country Gentleman

of oats home with him. I'll bet he got more oats than the horse is worth."

"Bear's Oil" Cures Kidney Trouble

One day a farmer, who was at that time a member of the state board of agriculture, called him. This man didn't know that he was a quack, and called him to treat a colicky horse. The horse recovered, and was eating hay before "Doc" arrived. When "Doc" arrived, he hurried in, set his grip down, and gave the horse an examination. He listened to the heart, to the lungs, and to both flanks, and then palpated him all over. At last, when jabbed in the loins the horse flinched a little. "Kidney trouble", said "Doc", and hurrying to his grip, he produced a small bottle of a greenish oil. Holding it up for the owner to see, he said, "Genuine Bear Oil." He rubbed some of the oil over the kidneys, remarking that it would soon fix him up.

Another farmer called "Doc" to see an injured dog. "Doc" announced that the dog's leg was broken. He splinted it up, and left a bottle of medicine. After "Doc" had gone, the owner examined the bottle and found that it was a bottle of liniment bearing directions: "To be applied night and morning and rubbed well." The owner said that he couldn't decide whether to take the splints off each time and apply it, or whether he should just rub it on the outside of the splints, so he didn't use it at all. The dog gnawed off the splints the next day, and in two or three days went sound on the leg. Certainly a remarkably rapid recovery for a broken leg.

"Doc" claimed to be extraordinarily expert in the treatment of cows. It seems that he had a regular system in treating them. At any rate, it became a standing joke among his clients, that, when they called "Doc" to see a sick cow, they must first fill the wash tub with soft water and put it on the stove, and then take the sheets off the beds. For that was the secret of "Doc's" system. No matter what ailed a cow, whether retained membranes, difficult parturition, impaction, or what not, "Doc" always called for four or five sheets and a tub of hot water. Dipping the sheets in the hot water, he would wring them out and wrap them around the cow's abdomen.

Significance of Autopsies at Shipping Centers*

By J. C. STOKES, Oak Glen, Ill.

OUR work includes autopsies on animals dead when unloaded from cars at the Union Stockyards, Chicago, the purpose being to determine the cause of death.

Brief statistics of our work at Chicago from October, 1917, to April, 1919, inclusive, are as follows:

During this time postmortem examinations were held on 30,904 hogs, of which 18,366, or 60 per cent, were affected with diseases of the lungs; 1,597, or 5 per cent, with diseases of the digestive system; 2,600, or 8 per cent, with diseases of the blood; 2,308, or 7 per cent, with hog cholera; 32, emaciation; 111 injured; 252 dead from unknown causes; and 5,640, or 18 per cent, were too badly decomposed to admit of diagnosis.

Postmortem examinations were held on 3,076 cattle, of which 1,524, or 50 per cent, were affected with diseases of the lungs; 95, or 3 per cent, with diseases of the digestive system; 465, or 15 per cent, with diseases of the blood; 670, or 22 per cent, were emaciated to such a degree as to permit that to be assigned as a direct or indirect cause of death; 204, or 7 per cent, were injured; 28 dead from unknown causes; and 62, or 2 per cent, were too badly decomposed to admit of a diagnosis.

Postmortem examinations were held on 4,531 calves, of which 1,908, or 42 per cent, were affected with diseases of the lungs; 947, or 20 per cent, with diseases of the digestive system; 589, or 13 per cent, with diseases of the blood; 274, or six per cent, emaciated; 481, or 10 per cent, immaturity; 96 injured; five from

*Read before the Illinois State Veterinary Medical Association, July 7, 1919.

unknown causes; and 230, or five per cent, were decomposed.

Postmortem examinations were held on 7,235 sheep, of which 4,589, or 60 per cent, were affected with diseases of the lungs; 220, or 3 per cent, with diseases of the digestive system; 286, or four per cent, with diseases of the blood; 1,339, or 18 per cent, emaciated; 45, or one per cent, injured; 11 unknown; and 729, or ten per cent, were decomposed.

The value of the 30,904 hogs, had they been received in good condition, would have been approximately $1,287,584.25. Their value, dead, was approximately $207,674.88—the difference representing a loss of $1,079,909.37.

The value of the 3,072 cattle, had they been received in good condition, would have been $648,806.40. Their value, dead, was approximately $36,874.00—the difference or loss being $611,942.40.

My experience leads me to believe that the mortality of live stock in transit can be greatly reduced if proper precautions are taken at the origin of shipment.

Veterinary Advice Needed

The veterinarian and the stock raiser are closely related, and I believe the veterinarian and the shipper should also become more closely related. I know of no better way to accomplish this than for the veterinarian to educate the shippers, where they are his clients, in some way, to the importance of a knowledge of the diseases and general care of live stock.

Besides passing on the health of the animals, the veterinarian should advise his clients as to the number of animals that should go in a car and the manner in which they should be loaded.

The number of hogs that should be placed in a car varies; so far as I know there is no specific number, but it occurs to me that the capacity of the car, size of the hogs and weather conditions should govern the loading. In one shipment I recall, there were three thirty-six foot cars, into which were loaded, 56, 58 and 62 hogs respectively, averaging 306 pounds. These cars were overloaded, especially as the weather was very hot, the U. S. Weather Bureau reporting 93° at noon at the origin of shipment, at about the time the hogs were loaded. They traveled 237 miles and when they were unloaded at the Union Stock Yards at Chicago the following morning at 9:00 A. M., ten dead hogs were taken from the three cars. If proper precautions were taken, the number of animals succumbing to suffocation and to injuries in transit would be greatly reduced.

We are not only encouraging the proper loading of live stock, but we are also encouraging a thorough cleaning and disinfecting of stock cars after each shipment.

The veterinarians' advice which should become more commonly and more enforceably followed regarding cleanliness and sanitation should be of great advantage to stock raisers, shippers and car-

Unloading Pigs at Chicago Stockyards.

riers in the general handling of live stock and would aid materially in reducing the mortality of live stock in transit.

Counsel against the shipment of weak and emaciated animals and of pregnant and immature animals is worthy of mention.

Detecting infectious diseases and preventing the spread of the infection is of great importance.

If greater co-operation existed between veterinarians, stock producers, shippers and carriers, the number of carcasses going to rendering plants would be reduced with a consequent increase of edible meat food products of which all nations are at present greatly in need.

Plant Poisoning*

By GEO. H. GLOVER, Ft. Collins, Colorado

Conditions of Poisoning

IT is important to know the conditions under which poisoning is most liable to occur. There can be no doubt that animals when left to themselves will by instinct exercise considerable judgment in the selection of their food. Experience has shown that more animals are poisoned when being crowded by the herdsman, especially cattle handled at the time of "roundup". When being driven, animals will grab at weeds that they would not otherwise touch.

When very hungry, animals are not very particular in the selection of their food. Many disastrous cases of poisoning occur when cattle and sheep are taken directly from the yards to the ranges after a long shipment.

Larkspur, and probably some other plants are known by experience to be far more poisonous when the foliage is wet with dew, rain or snow. When poisonous plants, like the death camas, start to grow in advance of the native grasses, they are eaten almost to the exclusion of everything else. An acrid, bitter, or otherwise disagreeable taste does not always bar stock from eating the first green food that appears in the springtime. Again, in the late summer the native grasses often cure early from drought, while injurious plants, like loco and lupine, remain green. It is obviously true that stock will eat most poisonous plants that are green in preference to grass that has dried up, and this no doubt accounts for the loco habit being acquired more frequently in the late summer and fall.

*Read before the Missouri Valley Veterinary Association, July, 1918.

Poisoning Dependent Upon the Season

The stage of growth has much to do in determining whether or not certain plants will be eaten at any particular season of the year. The large species of larkspur and the water hemlock become coarse and objectionable after flowering and are seldom eaten. On the other hand, some plants are relished throughout the period of their growth. The death camas is eaten with avidity just before the flowering stem is formed; equisetum is eaten more after being cured with the hay; and matured lupine with the seed pods appears to be relished by sheep. To analyze all of the conditions under which poisoning occurs seems to be a hopeless task. The subject is complex. In the realm of poisons we are still groping in the dark, and there are many mysterious cases of poisoning that are quite unaccountable.

Only Certain Portions of Many Plants Are Poisonous

The reputation of a plant as poisonous or non-poisonous may be affected by many circumstances. It has been proved that certain parts of a plant may be poisonous while other parts are not, and that the quantity of poison in any particular part may vary widely under different soil and climatic conditions and at different periods of growth. It is necessary to know the entire history of a plant before declaring it poisonous or non-poisonous. For example, the poison in lupines is confined almost entirely to the seeds, and if cut before going to seed makes a fair quality of hay. In water hemlock the poison is found largely in the roots of the mature plant. In the calabar bean, the very poisonous

alkaloid eserin is found in the cotyledons. In aconit seeds, the central part contains most of the aconitin. Not only may the amount of poison in any particular part of a plant vary greatly at different stages of growth, but it has been shown by Dr. J. P. Lodsy in Java, that in cinchona the amount of alkaloid in the leaves varies greatly between night and day and that the alkaloid is formed in the leaves during the day and deposited in the branches or bark during the night. Because of the fact that the most active principle in most plants is not uniformly present in any particular part of the plant, there is, as might be expected, contradiction in rating plants as poisonous or non-poisonous.

Individual and Racial Susceptibility

It is a matter of common observation that while a large number of animals in a herd may be poisoned, a few almost invariably escape, and all seemingly under the same conditions. The number poisoned and the degree of poisoning depend upon three factors: The quality of poison, the quantity of poison, and the racial as well as individual susceptibility to the particular poison in question. There is the greatest diversity in animals as to susceptibility to poisons. In Prof. Rudolph Kobert's text on Practical Toxicology is found the following information bearing on this subject: "The smallest snail will withstand more strychnin than an adult man. Many of the strongest cardiac poisons have no action whatsoever upon insects. Great care is necessary in thus reasoning from even the effects noted in experiments with warm-blooded animals approaching nearer to man. The rabbit can take more morphin than can a man of fifty times the rabbit's weight. Doses of lead, nicotin, cytisin, etc., sufficient to fatally poison man, do not injure the goat. Amygdalin does not affect dogs, but it kills rabbits. The hedgehog takes, with apparent enjoyment, a dose of cantharides that would kill several persons under excruciating pain. The bite of the most venomous snake does not harm him; he can even accommodate no inconsiderable quantity of hydrocyanic acid. While the frog is extraordinarily susceptible to the digitalis poisons they have no effect upon the toad".

Varying Feeding Habits

Another factor that complicated the grazing of animals, on a range where there are poisonous plants, is the uncertainty of their feeding habits, this being especially true of sheep. It is not an uncommon experience to see sheep eating greedily of plants that they have not been seen to eat before and will not eat the day or week following. This seemingly unaccountable appetite may be manifested in eating either poisonous or forage plants and may be true of the entire band or a few individuals. When a few individuals have been poisoned, it is safer to conclude, that they alone have been eating certain poisonous plants than it is to assume that they were the only ones that were susceptible. In most cases it will be found that a majority of the band will be eating largely of certain plants, and where the small species of larkspur and death camas are both growing they will eat largely of one or the other throughout the season. All things considered, it is impossible to predict with any degree of certainty whether or not the animals will eat of a particular poisonous plant if allowed to graze unmolested.

Preventive Measures

Much more may be accomplished in the prevention of poisoning than in treatment of animals after they have been poisoned. The principle is generally recognized to be true in its application to all diseases, and is especially true in this instance, for the reason that under range conditions, horses and cattle, especially, are without an attendant and are often not seen for days or weeks at a time.

Stockmen are advised to become familiar with the most common poisonous plants, to know the season of the year or other conditions of poisoning, and to herd their animals away from dangerous areas. At the same time there is some danger in herding animals away from dangerous areas, as many stockmen will testify. Many stockmen who have practiced herding animals from the worst poison weed ranges, have still suffered heavy losses, and claim to have smaller losses when the animals are allowed to roam at will and exercise their instinct unmolested in the selection of forage. It is true that the driving of animals

(*Continued on page 338*)

AMERICAN JOURNAL of VETERINARY MEDICINE

Published Monthly by
AMERICAN VETERINARY PUBLISHING CO.,
9 So. Clinton St., Chicago

Address all communications to the AMERICAN JOURNAL OF VETERINARY MEDICINE, 9 South Clinton Street, Chicago, U. S. A.

Subscriptions from the United Kingdom should be sent to Messrs. Bailliere Tindal & Cox, No. 8 Henrietta Street, Covent Garden, London, England.

Taking the Graft Out of Swine Vaccination

FOR the last five or six years, veterinarians in the Mississippi Valley and other regions where swine-raising is an important industry, have been applying themselves assiduously to the study of swine diseases and, of course, particularly hog cholera and its prevention. During the past three years, the subject of swine disease has occupied the most conspicuous place on the programs of the Missouri Valley Veterinary Association and the Illinois State Veterinary Medical Association. It has had an important place on the programs of all the state and local veterinary meetings in the swine-raising section of our country, and at many meetings the discussions have been confined to this topic to the exclusion of all others.

This intensive and continuous study of swine diseases has been most fruitful. The profession, as a whole, has advanced immeasurably in its understanding of the subject, and although much, very much, remains to be worked out, the average expertness of veterinarians in the treatment of the diseases of swine may now be said to be only a little less than in the treatment of cattle and seems to warrant the conclusion that in the no distant future swine practice will be handled with as great a degree of skill and exactitude by the average veterinarian as is horse practice, upon which the profession has been accumulating information for upwards of 200 years.

But while leading veterinarians and the veterinary associations were devoting their time and effort to the acquisition of knowledge on the scientific aspects of the subject, practical matters concerning the application of the information so gained were almost wholly neglected, and certain abuses, not common, but nevertheless important, have grown almost unrestrained. While the best men in the profession were applying themselves unreservedly to the elucidation of the facts concerning the cause, diagnosis, treatment and prevention of diseases of swine, certain short-sighted and avaricious members have not hesitated to use the information so gained for their own pecuniary profit; to establish a price for vaccination at the maximum the traffic would bear, and by this means to bring a certain amount of discredit upon the work of all veterinarians and an insistent demand by farmers and farm organizations that the work of vaccinating hogs be placed in other and fairer hands.

It is not necessary for us to say that an exorbitant price for vaccination for the prevention of cholera, or more than a fair price, is not for the best interests of either the swine-raiser or the veterinarian, for our readers already know this, and we believe there are few indeed among them whose standard of ethics is so low that they desire to mulct an important part of the industry that furnishes them a livelihood, or are such poor business men as not to foresee that such a policy must be shortlived and in the end disastrous.

During the past two years the uncertain and varying price of serum has increased the opportunities for overcharging for serum used in vaccination. Further, the uncertainty as to just what the serum used on any given herd of hogs cost, doubtless has led the farmers and the farm advisers to suspect "profiteering" in numerous instances where it did not exist.

Under such circumstances it was inevitable that a clash should occur if a better understanding were not arrived at between the farmer organizations and the veterinary associations and a fair basis for co-operation were not arrived at—a clash that admittedly would be bad for both sides and might set the swine industry and swine practice back a decade. In Iowa and Illinois representatives of the swine-raisers, county farm bureaus and the veterinarians of the state have agreed upon a plan for the fullest co-operation, a plan that it is believed will ultimately increase the amount of vaccination for the prevention of hog cholera in the states very largely and thus benefit both the swine industry and the veterinarian, a plan that is at the same time absolutely fair to both sides.

The plans are as yet only tentative. They require to be approved by the state veterinary association and the farmers' association before they are operative, but they are fair and just and right, and the agreement as outlined should prevail and we believe will.

In Illinois where farm advisers, or county agents as they are commonly called, have been the longest known and where there are more of them than in other states, these men are opposed to vaccination by other than veterinarians. The Illinois state association of farm advisers has officially gone on record in this matter in the following definite statement:

"We favor legislation or regulations prohibiting the distribution of hog cholera virus to others than licensed veterinarians, and further that farm advisers do not vaccinate hogs."

This was unanimously adopted at a meeting where sixty-five of the eighty-four farm advisers in the state were present. We believe that, with numerous exceptions, the attitude of farm advisers is the same elsewhere, and that it is in most instances the belief (often mistaken no doubt) that local veterinarians are not meeting their responsibility as they should, either because of alleged poor work that has been done or a belief that the farmers have been overcharged that has led them to assume a different attitude.

At its annual meeting a year ago, the Illinois Veterinary Medical Association formally adopted a resolution requiring all members of the association to, when requested, supply their clients with an itemized bill for vaccination, showing the actual cost of the serum and virus to the veterinarian and the charge for services. The farmers agreed that this was a step in the right direction, but believed that something more was necessary to eliminate the opportunities for overcharging for serum on the part of some veterinarians and made the following proposition:

To restore and maintain the confidence of the breeders and farmers, it is fundamental:

First: That in submitting his statement or bill for services rendered, the veterinarian separate the items into charges for serum, for professional services and for mileage, if such charge is made.

Second: That the charges made by the veterinarian for serum should be identically its net cost to him, plus a conservative percentage to cover handling, breakage, losses, etc., which in no case is to exceed 25 per cent. The veterinarian should state the particular kind and brand of serum and virus used and the serial number of each. This statement should be rendered on a uniform blank agreed upon by the joint committee of the State Veterinary Medical Association and the Illinois Agricultural Association.

Furthermore, the breeder, or farmer, may reserve the right to designate or furnish the serum secured through the Farm Bureau or otherwise, which the veterinarian uses on his herd.

Third: It is recognized that the professional skill and services of veterinarians, and the actual time employed in immunizing different herds vary to such an extent as to render a uniform charge for professional services impracticable. The Illinois Agricultural Association does not, therefore, undertake to say what such charges shall be. It does suggest that the Illinois State Veterinary Medical Association inspire its members with the attitude that such charges should be conservative and reasonable and in keeping with the services rendered and the professional skill required.

Fourth: In the interests of promoting better feeling among stock men and stimulating better veterinary service in the state, it is suggested that a joint committee of six be appointed, three of whom shall be active veterinary practitioners and members of the Illinois Veterinary Medical Asso-

ciation, and three members of the Illinois Agricultural Association, whose function it shall be to consider suggestions, questions, and complaints referred to it from time to time by individuals or by either association.

A conference was held by the representatives of the Illinois Agricultural Association and the Illinois Veterinary Medical Association and the foregoing agreed upon. It will come before the State Veterinary Association for approval or rejection, at its summer meeting in Champaign.

Such a plan will not meet the approval of the veterinarian who has been profiteering in the matter of swine vaccination, but that doesn't matter. His game is about up anyhow and should have been ended long ago before it brought the discredit that it has already brought to that great majority of the profession who have been honest and fair and square in the matter of swine vaccination. It may not meet the approval of some veterinarians who have been honest and fair in their dealings with their clients, but who regard the medicaments that a veterinarian uses and their cost exclusively the veterinarian's affair.

While such an argument has force, we do not believe it should prevail. The veterinarian is not a serum merchant primarily, but a professional man, and his function is not so much to supply his clients with serum as it is to use it skillfully.

In the long run, the farmer pays for the serum and the hogs are his. He is justly entitled to say what serum shall be used and to know what it costs. He pays for the veterinarian's skill and of course, is entitled to select the veterinarian and to know what he is to pay for his services.

A blanket bill for vaccination including the professional fee, mileage and the cost of serum and virus not only does not give the owner of the swine information to which, as one of the interested parties, he is justly entitled, but it is bad business policy in that it offers an opportunity for overcharging by the avaricious and grounds for suspecting overcharging, even where it does not occur.

The foregoing agreement does not set a price upon any man's work, but leaves that for a matter of agreement between the veterinarian and his client. It does eliminate the opportunity for charging a client more than a reasonable profit for the serum used on his herd, and to this, no veterinarian who has the welfare of the live stock industry and his profession at heart will object. If its provisions are carried out faithfully by both parties to the agreement, it will eliminate the chief cause for complaint that the farmer organizations and county agents have raised against veterinarians and should do more than anything else to restore and maintain confidence in swine vaccination and to place this work where it belongs, in the hands of veterinarians.

If it works out successfully in Illinois and in Iowa where similar negotiations are under way, the plan will undoubtedly be extended to other states.

The Veterinary Corps In the New Army Bill

DURING the closing hours of the session of Congress just adjourned the army reorganization bill was passed. The provisions concerning the veterinary corps of the army, as enacted into law in this bill, are a compromise between the provisions of the Senate Bill, which were very satisfactory, and the provisions of the House bill, which were very unsatisfactory. But the compromise or conference bill is, in some respects, an improvement over both bills, since it raised the highest grade in the veterinary corps from the House provision of major and the Senate provision of lieutenant colonel, to colonel, and firmly establishes the veterinary corps on an equal footing with every other corps of the army, with promotions on a par with all other services, and while the bill does not contain all the provisions that friends of veterinary legislature had hoped to see enacted at this time, it marks a tremendous advance over any previous legislation on this subject, and constitutes a very great victory, indeed, for the veterinary profession.

Briefly, it provides for 175 veterinary

officers in the regular army in grades from second lieutenant to colonel, inclusive, promotions to be made to the grade of first lieutenant after three years' service, to captain after seven years, major after fourteen years, lieutenant colonel after twenty years and colonel after twenty-six years. Veterinary officers are to be credited with governmental service heretofore rendered.

One hundred and seventy-five veterinary officers is not a sufficient number, for the regular army, but provision is made in the bill for calling reserve officers to duty in time of peace with their consent, and the deficiency will probably be made up in this way, since during the next year the veterinary corps will require a total of 300 to 350 veterinary officers, depending upon the ultimate size of the army and the number of horses that will be retained.

No enlisted personnel is provided for the veterinary corps, but it is believed there will be no change in the present authorization of enlisted men to the veterinary corps.

The bill deals liberally in the matter of classification of officers. In the future, they are to be in two classes, class A consisting of officers who should be retained in the service, and class B, officers who should not be retained in the service. If the latter have been honest and faithful, they may be placed upon the unlimited retired list at the rate of pay at 2.5 per cent of active duty pay, multiplied by the number of complete years of active service.

Under the provisions of the bill, Majors Fred Foster, G. E. Griffin, and McMurdo will be made colonels. Majors Turner, Lusk, Jefferis and Steel will become lieutenant colonels.

Stanclift, Nockolds, Vans Agnew, Cramer, Uri, Peter, Hill, McKinnon, Jewell, Sproule, Gage, Gould, Fraser, Pick, Donovan, English, R. J. Foster, Hanvey, Lytle and Loveberry will become majors.

Musser, Mitchell, Stokes, Shand, Williams, Mason, Edwards, Seeley, Van Allstyne, Teeple, O'Connell, Koon, Buffington, Leininger and Hornbaker will become captains.

Ingram, Brower, Wight, G. H. Dean and Nye will become first lieutenants.

Clarke, Mallan, Weisman, Conant, McCallam, Juzek, W. H. Dean, Renshaw, Homer, Shook, Gladfelter, Woodruff, Moore, W. C. Griffin, Derrick, Ewen, Grace, Curley, Sperry, Sager, Hess, McComb, Meisner, Faison, Wright, Bourland, Dunphy, King, Holycross, Robertson, Richards, Ruble, Caldwell, Feazell, Hartman, Huse, Kintner, Herbott, Timmons, Martin and Cherry will be promoted to first lieutenants in July or September.

The president is authorized to establish and maintain in civil educational institutions, reserve officers' training corps of not less than fifty, in which case a veterinary officer will be detailed as assistant professor of military science and tactics for the unit. Under certain conditions veterinary students in these units will be furnished commutation of subsistence.

The secretary of war is authorized to detail not to exceed two per cent of the officers to technical, professional or other educational institutions for instruction. This of course includes officers of the veterinary corps. At such schools they will draw their regular pay allowances and in addition, their tuition will be paid.

In view of what has occcurred in the past, the provisions of the army reorganization bill deals liberally with the veterinary corps and will be a source of gratification to the veterinary profession everywhere. To Surgeon General Ireland, more than to anyone else, is due credit for the liberality with which Congress has treated the veterinary profession in its army legislation. To Col. Morse, Lt. Col. Stanclift, Majors Foster, Gould, Jewell and others much credit is due. These men have done all their position in the army would permit them to do for the advancement of this legislation. Dr. W. O. Stillman, editor of the *American Humane Review*, did much and his efforts were supported by the Red Star Animal Relief Association, of which he is the head. The American Veterinary Medical Association helped. Numerous state veterinary associations wielded much influence on certain members of Congress, whose support was necessary for this bill, and veterinarians in civil life everywhere supported it. There were times when the outcome looked exceedingly doubtful and friends and promoters of this legislation were all but discouraged; because of this the gratifying outcome is all the more a matter of felicitation.

EXAMINATIONS FOR COMMISSIONS IN THE ARMY

In view of the passage of the Army Reorganization Bill, there are a large number of vacancies as commissioned officers to be filled in the Regular Army. Appointments for the time being will be limited to persons who have served as temporary officers of the army at any time between April 6, 1917, and the present time. Appointments will be made in all grades, subject to suitable qualifications and the age restrictions contained in the law. No person under 48 can be appointed a colonel, under 45 a lieutenant colonel, or under 36 a major. No person over 50 years of age can be appointed in the line of the army or over 58 in a staff department.

New applications will be received only until June 23, as arrangements must be made at once for the necessary examination of the applicants and their records.

Examinations will be held throughout the United States beginning July 7, 1920.

All persons who have applications on file and who have kept the War Department informed of their addresses will soon receive authorization to appear for examination. The records of applicants are now being examined by boards of officers. In addition, all candidates are to be given a personal examination to determine their physical, moral, educational and professional fitness for appointment.

Special regulations, including the character and scope of the examinations, are being distributed to all military stations and all recruiting offices, where they are available for the information of applicants.

All candidates for examination, whether now in the service or not, will be required to defray their own expenses to and from the places of examination, as there is no appropriation available for paying these expenses.

Exemptions from examination in basic educational subjects will be granted to those candidates who can convince examining boards that they have the required degree of education for appointment.

A Veterinary History of the War

ONE of the most interesting books that has come to our desk in recent months, one of the most interesting we have ever read, is Major General Sir Fred Smith's "Veterinary History of the War in South Africa."

This history was appearing serially in the *Veterinary Record* just prior to the outbreak of the Great War in 1914, but was not attracting much attention among American veterinarians at that time. Since the close of the war, it has been issued in book form, and in the interim, from the time it appeared in the *Veterinary Record* until the present, so many experiences recorded in this book have been so exactly duplicated in our own army and our own veterinary service that the reader is apt to forget at times that he is reading about things that occurred twenty years ago, and think he is reading of the occurrences of 1917 and 1918.

Our general staff must have known of most of the things told in this veterinary history. American observers accompanied the British armies in the war in South Africa, and in any case, it is their business to know what is happening in wars anywhere and what has happened in all wars, and yet, in violation of an act of Congress, and contrary to instructions of the President, the veterinary service in France was placed under the remount department, the very thing that beyond any question was responsible for the British army failing to conclude the South African War in the second month after it began, and permitting it to drag along for thirty-two months and be followed by a guerilla warfare for several months longer, costing all told thousands of lives and hundreds of millions of dollars.

The book is a large one and cannot even be summarized here, but a few extracts from the preface cannot be other than instructive.

In the beginning, General Smith says:

The war in South Africa, 1899-1902 was, above all, remarkable for the loss of animal life. No detailed consideration of this has hitherto been attempted, yet the subject is one of vast economical and Imperial importance. We suffered a dead loss of 326,000 horses, 51,000 mules and

195,000 oxen. This represents a money value of over sixteen and one-quarter millions sterling. These figures apply only to animals paid for out of the public purse; there were in addition tens of thousands of horses and other stock, the property of the enemy, which came into our hands and similarly perished. Moreover, the above figures relate only to the period ending May 31, 1902. Some thousands more would have to be added if the loss incurred in freeing the country from disease after the war were included.

It is difficult to visualize the meaning of these figures running into hundreds of thousands, but we may express the loss by saying that the horses standing side by side and drawn up in line, would extend one hundred and eighty-five miles, say from London to Manchester; the mules would occupy a line thirty miles in length, and the oxen one of one hundred and ten miles. Or we may state the facts in terms of average daily loss; this would amount to 336 horses, 53 mules and 200 oxen day by day throughout the thirty-two months the war lasted.

After pointing out the cause of the early losses, the cause was an insufficient ration of grain and no forage, General Smith says:

The loss had to be made good by employing hopelessly unfit unconditioned, untrained, legweary horses, taken straight off the ship, sent into the field, and similarly underfed. With every successive forward rush between Bloemfontein and Koomati-Poort these were killed off by thousands, and their places taken by material equally unfit and unstable. The losses from starvation during the Paardebery Campaign are the pivot on which all the subsequent wastage up to December, 1900, is centered. They rendered the depots of the remount department bankrupt, and initiated a series of horse-disasters without parallel in war. The country was strewn with thousands of dead, dying, exhausted, and sick horses scattered far and wide and with no one to collect and look after them. Week by week and month by month, the number of dead and ineffectives showed no diminuation, for there was no opportunity of retrieving the original error. The starvation of horses on the Modder River probably prolonged the war by two years, for had this appalling loss not occurred the campaign might have ended at Bloemfontein.

When one reads further on in history how the trail of the British army was marked by the dead horses, sometimes reaching thirty per cent in a period of six weeks during which the army did not engage the enemy, one is reminded of the saying of the French that the American army could be traced by its dead horses.

To quote again: "In the Transvaal and Free State operations, half the strength employed would have done the work in a shorter time, had the horses been fit and well fed. To bring the enemy to action it was essential to gallop them down. On no single occasion during the guerilla war was this accomplished on a large scale."

And, again: "It [the army] actually employed its remount depots to receive the sick, lame and otherwise diseased animals from the front, though warned beforehand by the veterinary service that such a step must result in infecting the remount horses". This recalls Camp Funston, where the veterinary hospital was placed in the center of the remount.

To quote again: "The care of animal wastage in war is no duty of the remount service; its functions lie with the horse and mule in health and fit for duty". Speaking of an experience later in the war, General Smith says: "Radical changes were made by placing a veterinary officer in charge of the remount depot. He brought into existence a new system and thereby effected a revolution in management that became the pattern for South Africa and for future wars."

Speaking of the difficulties with which the veterinary organization had to contend, General Smith says: "The veterinary service had been kept at such a low state that expansion on mobilization was impossible". How descriptive of our own army veterinary service prior to 1917. "Its establishment did not even meet with the requirements of peace conditions. Immediately after war broke out no officers were left at home and there was no reserve, and these had to be supplied by engaging young civilian practitioners with no training in military veterinary work, and no experience of military discipline".

Remember that in 1917, 1,300 American cvilian practitioners with no training in military work were commissioned.

"There were actually in the field four distinct veterinary organizations, only two of which were co-ordinated; the utility of the other two was practically nil".

Our own veterinary service in France was not co-ordinated until October, 1918, less than one month before the armistice was signed.

General Smith states that there were no hospitals for the treatment of the sick until after hostilities began, and then he proceeds to show with what difficulty the hospital may be organized in war time, and how essential to effective veterinary service it is for both officers and enlisted per-

sonnel to be organized and trained in peace times.

To quote again:

> Is it any wonder then that the veterinary service, deficient in all the essentials of organization for war, was impotent for work? Its organization began in Africa, and was built up piece by piece in the face of opposition. It had first to be separated from the remount service. Its civilian professional staff—outnumbering the regular by four to one—had, as far as was possible, to be trained. Its subordinate personnel for hospitals had to be picked up anywhere and everywhere, and then trained. Hospitals had to be created out of such materials as could be found, and frequently to be placed in the charge of civilians who had no knowledge of how to conduct them, and with no authority over the personnel.

And, further: "We look in vain in the pages of this history for any serious indications on the part of the authorities that they recognized the function, duties and potential value of an efficient veterinary service".

But, the conclusion is best of all. General Smith states: "It is satisfactory to record that since the campaign ended a recognition of the veterinary service has secured for it a hopeful future of utility".

The same is in an equal measure true of our own army. Refusing to learn from the disaster of the British in 1900 to 1902, they did learn from our own experience in 1917 and 1918, and the army reorganization bill which has just passed Congress, goes a long step forward in its provisions for veterinary service. The provisions are not yet what they should be, particularly in the number of veterinary officers, and they do not provide for enlisted men, in the veterinary corps, but these defects can be remedied by a future Congress, and we believe will be.

BOOK REVIEWS

Sheep Diseases

By E. T. Baker, D. V. M., Moscow, Idaho. Second Edition, Reset, 300 Pages, 118 Illustrations. Chicago, Ill.; American Veterinary Publishing Company. Cloth, $3.50, net.

The second edition of Sheep Diseases issued under date of March 15, 1920, is perhaps the most up-to-date and comprehensive work on sheep diseases published in America.

The author has added several new chapters that are particularly interesting and of special importance to veterinarians engaged in general practice or live stock sanitary work. The chapter on the wool industry gives an estimate as to the amount of wool produced annually, what wool really is, how it is graded, and outlines the methods for shearing, scouring, carding and combing, and interesting information relative to the manufacture and grading of woolen goods.

The author has added in the chapter on hygiene, some valuable topics, such as digestion in sheep, care of orphan lambs and the control of sex. The chapter on infectious diseases has been revised and brought up to date, and includes a large number of diseases not included in the previous edition.

It is possible that it would have been better to have described separately such topics as Foot Rot and Necrobacillosis, and there is some question as to the use of the term "Septicemia." It is noted also that the author states that piroplasmosis, or ictero-hematuria, does not exist in this country. Different investigators have reported finding this disease. The special type of pneumonia found in western sheep has not been described by the author. We believe this is an oversight, and hope that the Doctor will give us a clear-cut description of this disease in some periodical in the near future.

The arrangement of some of the reading matter is perhaps subject to criticism. For instance, anorexia and pica are included under diseases of the blood.

All in all, the second edition is a marked improvement over the first, and we do not believe that any veterinarian, regardless of the line of work he is interested in, can afford to not have "Sheep Diseases," by Baker, available in his library.—A. T. K.

HOG BOUGHT FOR $265 BRINGS $40,000

A pure-bred Poland China boar bought fifteen months ago from L. R. McClarnon of Bradville, Ia., for $265, was recently sold at private sale to W. H. Ellsworth of Goldfield, Ia., for $40,000, said to be the largest price ever paid for a hog.

Department of Laboratory Diagnosis

Edited by Dr. C. A. Zell

Microscope Reveals Actinomycoses

In this mail I am sending a sample of the discharge from a large ugly abscess on the lower jaw of a four-year-old cow.

The abscess occupies the entire left side of the lower jaw, and in the center there is an angry-looking raw place about the size of a tea cup which discharges very little pus, but bleeds freely. The case has been under treatment for five weeks without improvement.

I have been injecting tincture of iodin into it and giving the animal potassium iodid internally. The owner says that he has noticed this enlargement on the jaw coming for more than a year. It resembles actinomycosis, but I am inclined to think that it is not, since it has not improved under the iodin treatment.—W. A. T., Ind.

REPLY: Your specimen reached the laboratory much desiccated, and considerable delay was occasioned by the necessity of soaking it for several days before sectioning.

A microscopic examination revealed plentiful numbers of the ray-fungus and in addition rather numerous staphylococci and saprophytes. This case may be unhesitatingly diagnosed as actinomycosis. The contaminating organisms found in your specimen are by no means unusual in these cases. Since the ordinary use of tincture of iodin and potassium iodid internally has not proved of benefit in this case, we suggest that the tumor be incised freely and drainage effected from all of its recesses. That it then be packed with cotton in which has been incorporated all of the powdered bichlorid of mercury that the cotton will hold and that this be left in place for thirty-six hours and then carefully removed. Four or five days later, remove all the remaining portions of eschar.

The potassium iodid treatment that the cow is now on should be continued, and it should be pushed rapidly to effect so that in a period of ten days, and in no case more than two weeks, the animal will be discharging freely from the nose and eyes, and the coat profusely filled with epidermal scales. When this condition is attained, the potassium iodid may be withheld for a week to ten days, and the treatment then repeated if necessary.—C. A. Z.

BACTERINS FROM PYOGENIC ORGANISMS INDICATED

I am sending by today's mail, a specimen of pus taken from a horse's neck which is swollen from the withers to the poll to approximately twice its normal size. The swelling contains numerous pus pockets the size of a walnut. The prepuce is enlarged to about the size of a two-gallon bucket.

The temperature is normal, the appetite is good, there has been no loss in flesh and the hair looks healthy.

Please give your diagnosis and suggestions as to treatment.—C. L. P., Calif.

REPLY: The specimen of pus was received in excellent condition, notwithstanding the fact that it had traveled two-thirds of the way across the continent in these days of delayed mails.

It contained mostly streptococci and staphylococci and a moderate number of pus-cells. No other cellular elements were present.

It is our opinion that the swelling of the prepuce has no connection with the abscess on the neck and is not dependent upon it, other than that it may be due to edema from inactivity. If this swelling were due to an extension of the infection from the

neck, the condition would be sufficiently generalized to cause a high temperature, loss of appetite and the general symptoms of serious intoxication.

A mixed polyvalent bacterin containing killed streptococci and staphylococci organisms would appear to be indicated, together with such surgical drainage of the abscess as may be necessary. An autogenous bacterin would probably possess some advantages over a stock bacterin, but since the use of stock bacterins in such conditions is commonly successful, it is customary to resort to the autogenous bacterin only when the stock bacterin has failed.—C. A. Z.

FURTHER EXAMINATION NECESSARY TO ACCOUNT FOR DIARRHEA

I am sending you a sample of feces from a cow suffering from diarrhea of unknown origin. In the past two years, a bull and two cows have died on this farm from diarrhea and malnutrition of this type. They were treated unsuccessfully by competent veterinarians. No autopsies were held.

The cow from which the sample of feces is being sent, in addition to having a watery diarrhea, exhibits the following symptoms: Pulse 80, temperature 101° F., respiration twelve per minute. The appetite is poor and emaciation is gradually taking place. There has been a marked decrease in the flow of milk since the diarrhea began. The animal is dull.

Please examine the feces and let me have any suggestions that you may be able to give to enable me to make a diagnosis and formulate a line of treatment.—W. E. C., Maryland.

REPLY: The sample of feces was of a greenish color, normal odor and thin consistency. It contained no foreign substances, no parasites and no fat, no starch, no casein, no blood and no pus. It contained a trace of mucus, bile, cellulose, a few epitheliel cells and crystals of triple phosphates. No pathogenic bacteria, but only the ordinary feces organisms were found. From these facts, I am unable to deduce the cause of the diarrhea.

Not finding anything in the feces to account for the diarrhea, one would naturally first look to the feed and the water for the cause.

An examination of blood-slides from this case might elicit some valuable information as to a possible constitutional ailment that may be responsible for the diarrhea. It might also be instructive to know whether or not the palpable lymph-glands are of normal size.—C. A. Z.

PERICARDITIS DOES NOT ACCOUNT FOR HISTORY AND SYMPTOMS

Under separate cover, I am mailing a heart for examination and send the following suggestions as to diagnosis.

Unfortunately, the organ had been removed from the hen before I was called and there was probably every chance for contamination. The history of the case is that the chickens on this farm had diarrhea last winter. Within the last few weeks several have died without showing any marked symptoms except isolating themselves, showing a disinclination to move about, and a partial loss of appetite.

The birds are fat, their combs bright red and the feathers smooth. They live from a week to ten days after they are noticed to be sick.

The necropsy showed an accumulation of yellowish serum in the abdominal cavity and some lumps of a cheesy nature. The heart showed the most marked changes. The pericardium was greatly thickened and filled with a cheesy deposit and serum. The lungs were slightly congested. One or two of the mesentery lymph-glands showed the same condition as the heart. The liver and other organs were apparently normal.

This was my first chicken case, and I would not have had this one had it not been for the fact that these chickens belong to the wife of one of the largest breeders of Guernsey cows in this section and one of my best clients.—W. H. G., Virginia.

REPLY: The heart reached the laboratory in good condition, nicely packed and preserved in borax.

On gross examination the organ appeared somewhat enlarged. The pericardium was considerable thickened, but free from petechiae or hemorrhage, and only slightly discolored. It contained a yellowish, creamy exudate.

The bacteriological examination of the contents of the pericardium and of the heart revealed no pathogenic organisms,

but quite a number of saprophytes. The mesentery lymph-glands contained only saprophytes and a colon-like bacillus which cultivated easily, probably the result of intestinal contamination. Its pathogenicity could not be determined easily.

On sectioning, the heart showed a typical fatty degeneration.

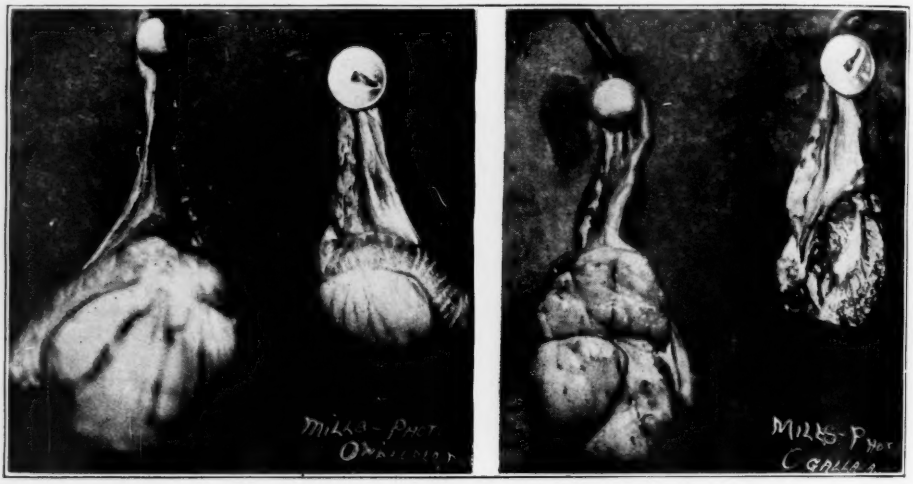
The findings indicate pericarditis was present. This may possibly have been due to a foreign body, as foreign body, or traumatic pericarditis, is by no means uncommon in chickens. No foreign body was found.

It would be far more satisfactory to examine an entire chicken, and such examination would probably be necessary before one could hazard an opinion as to what ailed other members of the flock that died of similar symptoms. If any other birds in this flock are now affected, I urge that one be sent entire to the laboratory.—C. A. Z.

OPERATION ADVISED FOR SARCOMATOUS GROWTH

I am sending you under separate cover, two sections of the testicles of a fox terrier, for laboratory examination. I would be pleased to have such information as you may be able to give from the examination. The history is as follows:

The subject, a male fox terrier dog of about fifteen pounds, ten years old, black and tan, in color, with the history: about one year ago his teeth began to show soreness, and the gums began to part from the teeth, the right testicle began to show enlargement, and the subject showed pain at the time of urination. This condition ran on for some eight months without getting much worse until about nine or ten months after symptoms were first noticed, at which time the right testicle was seen to be out of place and forward about half way along the penis, pain when the bladder was full, and at the time of urination became worse. The animal would roll and cry out, squat and show great pain.



Two views showing malignant growth (sarcoma) on dog's testicles.

The treatment was the removal of one tooth, the rest cleaned and kept painted with iodin, the removal of both testicles, and putting animal on soft diet along with liq. pos. arsenitus, and after two weeks all signs of pain and discomfort left.—P. T. S. Neb.

REPLY: The examination of the specimens of the dog's testicles sent us reveals a malignant growth—sarcoma. If this growth has not already extended from the testicles, which is probably the original seat, recovery should follow operation.—C. A. Z.

DIAGNOSIS IMPEDED BY POOR CONDITION OF SPECIMEN

I am sending you the carcass of a chicken, which was the third to die in a couple of days after becoming droopy.

There seems to be a thin discharge from the bowels, in some cases streaked with blood, and the egg apparatus seems to be interfered with in some cases.

Head symptoms were noted in some of the cases that died, although this was not the case in the specimen I am sending you.

If you have a vaccine that you think would be beneficial I would like to try it out on about twenty, and report results for the AMERICAN JOURNAL OF VETERINARY MEDICINE.

I will make an effort to send you a cat and also a rabbit killed by this disease that has carried off a large number here in Sioux City.

The chicken sent you is from a small flock of my own that is kept in fairly clean quarters.—C. B. Knowles, Sioux City, Ia.

REPLY: The specimen sent me was received in a bad, decomposed condition; therefore no satisfactory diagnosis can be made in this particular case.

There were no pathogenic organisms present, but many contamination organisms and saprophytes.

The organs were very soft and decomposed and of a greenish color.

I would like to have another specimen, packed in borax, if possible, as these cases are of interest to the profession.—C. A. Z.

DIPHTHERIA VERY FATAL TO YOUNG CHICKS

Under separate cover, I am sending material collected from chickens for diagnosis. I know very little about the diseases of chickens, but I diagnosed this disease as diphtheria. The scrapings I have suspended in a normal salt solution.

The history and symptoms are as follows:

The owner has about three hundred old chickens and six hundred young ones, ranging in age from a few days to six weeks. He noticed the first symptoms of trouble about a week ago, only chickens from two weeks to six weeks of age being affected. They die in two or three days, apparently from suffocation.

The attack begins with sneezing, rapid emaciation, swelling in the mouth and eyes, a muco-purulent discharge from the mouth and eyes that later becomes diphtheretic and caseated. Patches in the mouth are covered with a similar exudate.

In removing this exudate from the eye, practically the entire cornea is removed with it without any resistance from the patient. From two to fifteen of these chicks have been dying every day, and in all nearly two hundred have succumbed.

They get the best of care, are kept in a brooder house, with chick feed and curdled milk as rations. Potassium permanganate has been used in the drinking water at all times. While sick, the chickens are listless, huddle in bunches and assume peculiar attitudes, such as standing stretched to their utmost height or crouching on the floor with the head tilted sideways.—R. C. G., Neb.

REPLY: The material you sent consists mostly of degenerated tissues. Microscopic examination revealed a large number of bacteria. Besides a number of contaminating organisms, there was a Gram-negative bacillus present, probably of the colon group, and the bacillus necrophorus. No typical diphtheria bacilli were found, and I am of the opinion that the necrosis bacillus is to blame for the degenerative processes in the eye and throat lesions.

Your diagnosis of chicken diphtheria is absolutely justified, as such is the actual pathogenic condition. Quite often we are unable to find the chicken-diphtheria-bacillus in such degenerated tissue, since other mixed infection and contaminating organisms overgrow this particular bacillus so very rapidly.

As to treatment, we suggest an autogenous bacterin prepared from the organisms found in the material collected from the lesions. Such conditions in fowls ordinarily respond readily to bacterin treatment.

Flavisol would appear to be the ideal antiseptic for the local treatment of affected cases, because of its high bactericidal power and its low toxicity.—C. A. Z.

PACKING SPECIMENS

The greatest care should be exercised in the preparation and packing of specimens for shipment, to insure their arrival intact. Full directions appearing in the June number should be followed closely.

DEPARTMENT OF

CATTLE PRACTICE

Edited by JOHN FRANCIS DE VINE, D. V. S.

Professor of Bovine Medicine, New York State Veterinary College at New York University, New York City

Sterility Technic

THE technic for the relief of irregular breeding or temporary sterility where cases are amenable to treatment is not so complicated as it might at first seem, and the examination and diagnosis do not differ materially in character from those in other abdominal surgery, with the exception that the generative organs are more accessible and easily handled, making more definite information and more accurate diagnosis possible than with most of the other abdominal organs.

The trained surgeon with the sensitive touch, acute conception and good common sense, is the one whose opinion is looked upon as reliable and valuable and so it is with this work. A man who is thoroughly familiar with the anatomy of the generative organs and acquaints himself with their pathological conditions, and from study, inquiry and experience learns the probable effect of these pathological conditions with reference to breeding, is soon able to do creditable work, give valuable information and render distinctly professional and valuable service to the stockowners.

The physical makeup of the operator which at first might be looked upon as of little importance, may be of considerable advantage or a pronounced handicap; so much so that I would not advise anyone with an unusually large hand, wrist, or forearm, to attempt to specialize in this class of work, since much of it will be with heifers, and if the forearm is too large, bimanual manipulation is awkward or impossible, and there is always the danger of tearing the vagina at its upper commissure which is far from pleasing to the average owner of fine bred cattle.

As might be expected, the technic of different operators will vary more or less, as with other branches of our work. The technic will differ most, however, with those who use instruments for all examinations and those who use them but little, but the general principle will be very much the same..

If one is to examine a large herd, it is well, if practical, to withhold all roughage from them for ten or twelve hours. This is especially true with regard to animals that are on good pasture. When the digestive tract is too full, the examination is much more difficult and the hands tire much quicker, in fact to attempt to examine any number of animals just off grass is unsatisfactory in gaining positive information as to the condition of the organs, and it is exhaustive to the operator. It is well to have an attendant precede the operator and wash off the anterior parts of the animal with soap, water and a mild antiseptic.

Experience soon teaches one that if the operator does too much of the manual labor his hands and arms will not be in good condition for the more delicate work. Ridgling operators will appreciate this at once, since really the first sense of touch of the organs before the fingers tire or cramp often gives one the most accurate information relative to their condition. Where a number of animals are to be examined, an assistant can aid the operator materially by emptying the animal's rectum. This is usually accomplished by passing the fingers, cone-shaped, into the rectum, then spreading

the fingers sufficiently to dilate the sphincter; this, however, will not do the work when the animal's bowels are filled with grassy content. Enemas given either with running hose or pump and tube, will work better in these cases, providing sufficient time is given for the animal to evacuate the water introduced.

Keeping Records.

It is well to have some definite rule to follow in order to secure as much information as possible from those in charge of an animal to be examined, and to keep for future reference the findings on each individual animal. This is absolutely necessary if one is doing a considerable amount of this work in order to be able from time to time to give an intelligent prognosis and reliable information to those interested.

For instance, it is well to learn the approximate age of the animal, whether or not she has been pregnant and the result. That is whether she aborted, held her placenta, etc. If so, how severe and lasting the metritis was and what attention she had; her subsequent periods of estrum, how often she has been bred since *and when bred last.*

Of course there will be negative information in some cases, particularly as regards heifers. I repeat, it would be well to learn as much as possible from the attendant relative to the breeding history of the animal, *but it is still more important that we do not rely entirely on this information* or we will find ourselves frequently stumbling or going headlong into trouble.

After the region of the vulva is cleaned up and the rectum emptied, proceed as if you had absolutely no history.

Never take it for granted that the animal is not pregnant. This will hold good even if the animal has just dropped a calf. Let your findings be your guidance entirely until you have completed your examination, then you may couple the findings with the history given you for what it is worth.

It is not good practice to attempt to examine a heifer as to the cause of her not breeding until she is at least past 16 months old, 18 or 20 months is better, unless the operator has an extremely small hand or the heifer be particularly well developed, because it is next to impossibe to enter the vagina of a very young heifer or one whose vagina is exceptionally small.

It is my personal opinion that an examination that does not include a vaginal examination is incomplete and will trip the smartest practitioner sooner or later. It is particularly unfortunate when one operator is compelled to reveal what another operator has overlooked solely through his careless method of examination since in such cases it is plainly evident to those interested that it is necessary that vaginal conditions be remedied before results can be expected, and unforunately aside from cervicitis, the troubles that must be handled or relieved per vagina are by far most common in virgin heifers, which in turn are the hardest to handle. We not infrequently find cysts and tumors in the vagina of virgin heifers that are interfering with either copulation or conception; and more frequently the accumulation of a considerable quantity of muco-catarrhal exudate confined by remnants of a persistent hymen, which of course inhibits conception and must be drained by breaking down the band retaining it.

Fibrous bands sealing the mouth of the cervix of virgin heifers are not uncommon, and will naturally be overlooked unless a vaginal examination is made.

After exploring the vagina, the cervix is then examined. It is rather difficult to point out the variations in cervices that might be styled normal or those cervices that need no attention, excepting on the killing floor or some similar place where a number of cervices may be viewed and examined. I think the knowledge is rather general, that what might be styled a nice tight cervix approximating normal texture, needs no attention. The dilating of such a cervix or interfering with it in any way is unnecessary and may be harmful. This is equally true of the cervix of the mature animal that has been dilated several times by parturition. The external or vaginal cervix having one or several granular protuberances extending out into the vagina. Experience will prove that these granulations need no trimming or surgical interference unless such exuberances extend into the lumen sufficiently to oc-

clude it, which is a very rare occurrence.

The cervix is now grasped either with instruments or the hand (I prefer the latter), the other hand is then introduced into the rectum (I use the left hand for rectal examinations); the uterus is grasped with the middle finger at the bifurcation of the horns, and upset so to speak, so that the entire cervix can be manipulated thoroughly between the two hands.

If we are not examining the animal at the time of estrum, and we find the cervix dilated or partially dilated and too long and too large to be normal, it is an indication of cervicitis and should be handled as outlined in my previous article on cervicitis.

The fundus and horns are then palpated, the horns being followed to their anterior extremities to ascertain their condition and to locate the ovaries and tubes.

I will discuss in my next article some of the normal and pathological conditions we may expect to find.

FATAL DIARRHEA OF CATTLE

I have been having serious trouble the past six months in this section with a condition among cattle which seemingly has the majority of veterinarians hereabout baffled as to diagnosis and treatment.

The disease begins with a diarrhea, dark and very fetid, and persists in many cases as long as four or five weeks, finally terminating fatally. None of the animals affected retain their appetite, but gradually grow weaker and weaker until death ensues.

One farmer in this section lost nine yearlings, another lost six and had several others which had mild attacks and recovered. Usually about the end of the first week, the feces become streaked with mucus and blood, and this seems to some extent, a measure of the severity of the attack.

I have found no drugs of any value in checking the course of the disease, but have had fairly good results with bacterial injections.—C. W. G., Ill.

REPLY: The condition seems to be a local one, and I take it also that this enzootic is entirely new to your locality. You evidently have an enteritis without much gastric involvement, since you state the animals retain their usual appetite. If it is as chronic as Johne's disease usually is, that may be your trouble, but if it is a more acute disease, and I think it is from your description, then there is probably no way of arriving at a definite conclusion as to its nature without having it studied bacteriologically, and even if by this means you incriminate no organism, it may help to direct your attention to some form of soil or water infection, which may be a causative factor. If Johne's disease or pseudotuberculosis can be positively excluded, you evidently have something unusual to deal with, since your description does not tally with any of the commoner diseases we are all familiar with, such as anthrax or septicemia hemorrhagica.—J. F. D.

ERGOT POISONING INDICATED

I would like some information on the following.

While in the country recently, I noticed some of my client's calves with the tops of their ears gone; some had also lost their tails. On questioning the owner, I was given the following history:

The first symptom noticed was that the skin was peeling from the nose. Later the ears became affected and the tips sloughed away. Two of them lost their tails, also.

The calves with the cows seemed to have sore mouths, and refused to suck for a few days.

Of the thirty head, about a dozen were affected, and in one case the disease proved fatal. The others recovered spontaneously, and are doing fine. The outbreak occurred in the fall before freezing weather, and ran its course in about sixty days.—M. M., Okla.

REPLY: It seems as if we could eliminate at once in these cases the probability of calf diptheria or necrophorous infection, as the cases were too mild and the percentage of recovery too high. There are several forms of stomatitis which may and do develop in calves from time to time, particularly apthous stomatitis of sucklings, but these cases are not ordinarily complicated with any such symptoms as sloughing of the ears and tail.

The history and description of the cases you cite correspond more nearly with gangrene associated with ergot poisoning, in which parts of the skin, portions of the tail, ears and extremities frequently slough off. There is the possibility of it being mechanical, due to caustics, but it seems more of a systemic circulatory condition. It would be interesting to know if by any possible chance the calves had access to ergot.—J. F. D.

DEPARTMENT OF

SWINE PRACTICE

Edited by A. T. KINSLEY, M. Sc., D. V. S.

SHOULD WEEK-OLD PIGS BE VACCINATED

When vaccinating sows for hog cholera, having a litter of pigs a week old, should these pigs receive the serum alone treatment? How young can pigs be given this treatment? When using clear serum, which is preferable, the clear virus, or blood virus?—M. A. K., Illinois.

REPLY: According to recent experiments conducted by the Bureau of Animal Industry, pigs a week old may be permanently immunized against cholera by the simultaneous treatment. Use liberal quantities of a known virulent virus and sufficient serum to give them protection. The dosage, generally speaking, should be 1 cc. of virus and 2 cc. of serum, increasing the serum for the larger pigs.

As to the use of clear serum and clear virus; if the clear virus is reasonably fresh it should have a distinct advantage because of the absence of any contaminating organism, although the use of clear virus has not proved that it has any particular advantage over the ordinary virus.—A. T. K.

MEAT NOT INJURED BY PERI-INTESTINAL EMPHYSEMA

I am sending you by express some pathological specimens, consisting of a portion of the intestines and some fat from the abdominal cavity of a hog. As you will notice, they are covered with bubbles, the formation of which I am at a loss to explain.

These specimens were brought to me by a client, who stated that he found them in an apparently healthy hog he had butchered that day. All the organs were normal, but the meat was somewhat softer than usual.

Kindly examine these specimens and publish your report in the AMERICAN JOURNAL OF VETERINARY MEDICINE.—P. H. C., S. Dak.

REPLY: The condition of the intestine is one that is designated as peri-intestinal emphysema. The exact cause of peri-intestinal emphysema has not been determined. Some investigators are of the opinion that this condition is the result of the migration of gas-producing bacteria into the tissues surrounding the intestine. After the organisms have located, they become active and liberate gas which accumulates in the tissue. Others are of the opinion that the gas escapes through the walls of the intestine and is retained in the peri-intestinal tissue.

The condition is of no serious consequence and does not in any way injure the meat of the animal for human consumption.—A. T. K.

MANY CAUSES LEAD TO POSTERIOR PARALYSIS

Please give me some information on, and the probable cause of the following conditions:

I have recently had several calls to high-bred Poland China sows showing posterior paralysis. Apparently these animals are normal. The temperature is normal, appetite good and they seem to be in no pain, about the only trouble being, as the stockmen say, "They are down in the back."

Of course, it is no trouble to diagnose this as posterior paralysis for the benefit of the client, and to make a guarded and an unfavorable prognosis, but still in my mind remains the doubt of the probable cause of this condition.

What is your opinion and the possibility of a treatment?

I realize the history and symptoms are very brief, and I do not expect you to diagnose the individual case, but what I would like to know is what causes may produce this condition. Have such cases been successfully treated?—X. G. M., Arkansas.

REPLY: The cause of posterior paralysis in pigs may be due to inbreeding, tuberculosis of the bone, disturbance of the nerves, parasitic invasion or malnutrition. No direct tissue change has been found in the tissue of hogs in which this paralysis occurs as a result of inbreeding.

Tuberculosis is relatively common in swine, and this type of paralysis occurs, usually, in swine weighing 100 pounds or more, and is characterized by the regular tubercular lesions of the bone. The tuberculin test may be applied to an affected animal to determine whether or not the animal is affected with tuberculosis.

Paralysis due to disturbances of the nerve tissue usually occurs in mature hogs. Such cases are practically always incurable. Paralysis due to invasion of parasites may in some instances be relieved by the proper administration of intestinal vermifuges and the elimination of all intestinal parasites. Although, if the condition is the result of parasitic invasion of the muscle, such medication will not give relief.

Paralysis due to malnutrition occurs in swine in which there has been an insufficient quantity of lime salts in the feed, and can usually readily be overcome by the administration of such agents as calcium phosphates.

Paralysis in pigs occurring about the time of weaning is probably rickets, and may be overcome by feeding lime salts.

Some cases of paralysis have responded to a course of sodium salicylate. Affected animals should be carefully dieted and their diet should include skim milk or some other bone-forming food.—A. T. K.

TROUBLE DUE TO LARVAL FORM OF ASCARIS SUIS

I am sending you under separate cover, portions of the lungs, spleen and some glands from a 50-pound red shoat which had been following some cows, one of which when posted showed what appeared to be tubercular lesions, and another one seemed to react to the tuberculin test.

This pig showed some reddened glands, especially the mesenteric, axillary and inguinal.

There was some cystitis and a few petechiæ in the bladder, also several petechiæ on the outside of the heart as well as on the endocardium.

Some sixty pigs had died on this place at intervals, and the two that died before this one were said by a veterinarian who posted them, to show lesions of hog cholera.

This pig had a temperature of 105° F., in the nest without excitement, the morning it was bled to death for examination.

You will doubtless note that the caseated pus does not seem to be in spherical masses and that there is a center to most of the masses with a fluid or semifluid content.

Is this tuberculosis? C. B. K., Ia.

REPLY: After a careful examination of the specimens, we believe that the lesions which you thought might possibly be tuberculosis are due to the encysted larval form of the ascaris suis. We also believe that it is probable that the larval form of this parasite is responsible for most of the trouble in this herd.

There is some evidence of swine plague in this specimen, but we failed to find any evidence of cholera. You failed to send us the bladder or heart, in which you said some petechiæ were found.

Treatment for larval ascaridosis is difficult, and must necessarily be rather long drawn out. It is well to use vermifuges

liberally, and it is necessary to provide clean quarters, clean water and change the animals from one pasture to another frequently, in order to prevent this infestation. You may find it advisable to use swine plague bacterin in controlling the secondary infection which exists in these cases.—A. T. K.

Department of Surgery

By DR. L. A. MERILLAT

BORNA DISEASE

In the *Revista del Instituto Bacteriologico,* Buenos Aires, Kraus, Kantor and Quiroga announce they have cultivated a diplococcus from lesions of the brain of horses affected with enzootic meningoencephalitis, with which they were able to reproduce the disease in rabbits and horses. The disease which they say was first observed at Borna near Leipzig in 1894 and sometimes called Borna disease, has been prevalent in Argentine for several years past.—L. A. M.

FLY REPELLENT

A veterinarian, during surgical operations, as well as in the treatment of the sick pestered with flies, always finds good use for an effectual and practically non-irritant fly repellent. In fact they are indispensable. It is also a fact that a great many irritant and also useless "fly dopes" are sold on the market. The drug stores are full of them, and containers are seen on almost every farm. The price is always high compared with the actual cost of the contents, and few of them are bland enough to apply as frequently as desired. Sprayed over cows, they nearly all redden the skin and if continued cause harmful depilations. Here is a simple, cheap, harmless and effective one that the veterinarian can easily make and dispense to clients with the assurance of giving very good satisfaction:

Common laundry soap, 1 pound.
Crude petroleum, 1 gallon.
Powdered napthalin, 4 ounces.
Water, 4 gallons.

Boil the soap in the water until well dissolved. Dissolve the napthalin in the petroleum. Mix the two solutions. The mixture is best applied with a brush or sponged over the hair with a cloth or sponge. Try it and be convinced. It is the prescription recommended by the Utah Agricultural College.—L. A. M.

DELAYED SHOCK

H. Vallee and L. Bazy[1] demonstrate by carefully conducted experiments the close relation of delayed shock and traumatic toxemia. Muscular proteolysis produced by endogenous ferments are devoid of toxicity, while that of bacterial origin is toxic if the bacteria themselves are capable of producing toxins. Muscle fluid obtained from healthy oxen or horses by expression or by aseptic spontaneous autolysis was shown to be entirely harmless, while that obtained from the disintegration of muscle tissue by pathogenic bacteria, although filtered and centrifuged, was fatal to rabbits and guinea-pigs. The increase in virulence of micro-organisms grown on muscle as compared with the virulence of those grown on the best artificial media is shown by careful tests with the *Bacillus edematus maligni.* Two cubic centimeters of a twenty-four hour culture killed a rabbit in two to three minutes, while only one cubic centimeter was required to produce the same results from

[1] *Recueil de Medicine Veterinaire,* Aug. and Sept., 1919.

a five-day culture. The same culture on artificial media lost virulence in about the same proportions, showing the aptitude of muscle cultures to yield highly toxic products. The authors conclude that microorganisms are etiologic factors in traumatic shock of the delayed variety and advise its prevention by serotherapy.—L. A. M.

The horse is coming back. They are going to be high and scarce before long. We should be raising horses to take the place of those that are getting old.—*Breeders' Gazette.*

Department of Live Stock Poisoning

By L. H. PAMMEL, Ph. D., Ames, Iowa
Professor of Botany, Iowa State College

Readers are urged to take advantage of the opportunity offered by Dr. Pammel, for the identification of specimens of supposedly poisonous plants. Two good-sized specimens, carefully packed, should be sent to him direct, with such history as may be available. Simply mention that you are a reader of the AMERICAN JOUGNAL OF VETERINARY MEDICINE and no charge will be made for this service.

ACORN POISONING

By L. W. Wynn Lloyd, Carnarvon, Wales

In December, 1917, Mr. E. H. Pratt of North Allerton contributed to a contemporary journal under the heading "Undiagnosed", a record of cases of an obscure complaint in young horses.

Mr. Jas. Brown of Ramsey, I. O. M., replied with a description of similar cases seen by him. This was followed by a note in the next issue by me, on several cases of the same nature.

The symptoms in the average animal were: temperature variable, ranging from 99° to 104° F.; pulse accelerated and feeble; injected mucous membranes; muscular tremors in most cases; inability to stand for any length of time and later, complete prostration; obstinate constipation; feces dark colored and often covered with mucus; urine dark coffee-colored and flaky, leaving a considerable mucous sediment when allowed to stand in a test-tube.

Autopsies were disappointing. There were no intestinal lesions. Nephritis was present in most cases, and always a quantity of dark-colored urine in the bladder. Partly digested acorns were found in the stomach and intestines.

In concluding my note at the time, I stated four conditions were common to all my cases: (1) They were all females (I have since seen males affected). (2) They were out night and day in winter. (3) None were plethoric animals and they grazed on poor land. (4) The pastures had a number of oak trees in or around them.

"What can be the cause and nature of this condition? In view of our present meager knowledge of the pathology of azoturia, would it not be reasonable to suggest that these animals suffered from a form of this disease? Would ingestion of acorns cause the blood to become surcharged with proteids and bring about the lesions—the tannin causing the constipation?"

Since writing the note just quoted I have seen several other cases, three this winter. The last one, an aged mare, recovered after about a week's treatment with cathartics, frequent enemas, stimulants, injections of strychnin, etc.

I am now convinced that I have been dealing with acorn poisoning. There was evidence in almost every instance that the animal had eaten a quantity of acorns. The pastures were bare and poor and acorns fall in great numbers at that season—November to January.

A sample of urine from one case was sent to Prof. Ramsden of the Biochemical Laboratory, Liverpool University, with a brief history and a suggestion that acorns might have caused the mischief. He very kindly examined the urine and I give his report:

"At your request I am reporting to you the result of my examination of the urine of a filly recently dead under circumstances suggesting that consumption of acorns was responsible for the death.

"The urine contains much hemoglobin —about as much as in fifty times diluted blood. No red corpuscles, therefore the hemoglobin has presumably passed the kidneys already in solution and there has been considerable hemolysis inside the blood-vessels—a sort of black water urine.

"Albumin is plentiful. There is also a strong glycosuria—as much as 1.7 per cent of glucose. These findings would, in a man, strongly suggest poisoning by food stuffs rather than by parasitic or bacterial invasion. Whether the combination of glycosuria and hemoglobinuria, have this significance in a horse, my knowledge does not justify me in expressing an opinion.

"As regards the acorns submitted, they were not invaded by molds or other parasites. I have not succeeded in discovering any investigations on acorns in the literature or any reference to their being poisonous. But I hope to cover a larger area and if I find anything significant will let you know.—W. RAMSDEN."

Oak-Brush Grazing Common in Utah

The above account by Dr. L. W. Lloyd of Carnarvon, Wales, is of interest to me. Some American writers have attributed poisoning to acorns. I have before me a bulletin by D. Dwight Marsh, A. B. Clauson and Hadleigh Marsh, which states that *Quercus Havardii* and *Q. Gambelli* growing in South Western United States are poisonous. The above authors, in Bulletin 767, U. S. Dept. of Agriculture, describe the symptoms as follows: constipation, dark and bloody feces and emaciation. They state that they produced the disease in experimental animals, in six days. They conclude:

"During the summer and fall the oak-brush ranges of Utah can be used for grazing, not only with no harm to cattle, but with positive benefit.

"The admission of cattle to oak-brush ranges before grass has started, practically compels the cattle to eat oak, as that is the only forage available. To make certain that there is no loss from oak brush at this time, it is important that an examination of the condition of the range should precede the admission of cattle, rather than that they should be admitted on a fixed date, inasmuch as seasons differ markedly in the advancement of the vegetation. After the grass has started so that the cattle have an opportunity to get something in addition to the oak, there is little danger of oak poisoning.

"On the shinnery ranges, as on the oak ranges in Utah, the danger to cattle is from an exclusive diet of oak. The shinnery ranges can be used without loss, provided a comparatively small quantity of other feed is available."

The oak mentioned belongs to the division of the white oaks. It produces one of the sweet edible acorns. The poisoning described by the authors is attributed to the leaves and buds of the plant and not to the acorns.

C. D. Marsh states in Bulletin 575, U. S. Dept. of Agriculture: "It seems probable that oak leaves do not have any destroying poisonous properties, but on the contrary, especially when the leaves are mature, form a valuable element in the forage of range animals. When cattle are fed exclusively on oak leaves they suffer from constipation so that on an over-grazed range this condition may become so serious as to produce illness and death." He mentions gamble oak (*Q. Gambelii*) and shinnery oak (*Q. Havardii*). I published notices in this JOURNAL, Vol. 12, p. 323; Vol. 14, p. 361; Vol. 14, p. 191; Vol. 14, p. 455.

It is a well known fact that acorns are much consumed by hogs. Many of the hogs in Arkansas and the Ozark country are fattened on acorns. I remember, as a boy, that our hogs were allowed to feed on acorns, especially white acorns, in Wisconsin. I do not remember that a single case of poisoning occurred. I think, however, that the

black and red acorns are injurious. They have a large amount of tannin in the bark and acorns. I do not know that there are any analyses extant of these acorns. All acorns are rich in starch, a splendid stock food.

The bark of the English oak (*Quercus robur*) is rich in tannin, and it is likely that if animals consumed some of the bark poisoning might occur. It is, however, a fact that the acorns in Europe are much consumed by stock and there are few cases of poisoning on record, so far as I know.

Cornstalk Poisoning

Dr. F. D. Luckey in a recent paper on cornstalk poisoning[1] states that there is little trouble during the fall among horses and cattle. He states that corn sorghum and kafir corn when stunted by drouth appear to develop some poisonous product. "It pays to put as much as possible of the corn and sorghum in the silo. The heating and fermentation in the silo seem to evaporate or otherwise dispose of the poisonous principle.

"The next best thing is to cut the corn up into stock fodder. When we have open dry weather the poisonous principle gradually disappears from the fodder, and it may safely be fed after January 1. If we have a dry fall this fodder becomes safe a little sooner. On the other hand, if we have a rainy fall the fodder is more or less dangerous all through the winter. It is, therefore, highly advisable to haul fodder and put it in dry sheds. Leaving it out in the open is taking a chance on rendering it absolutely unfit for feeding during the whole winter.

"The poisonous principles in stunted corn, sorghum and kafir corn produce quite a variety of symptoms. Just a few bites of stunted sorghum, if eaten while standing, will often cause the death of a cow almost instantly. After the sorghum is moved and put into the shock it seems to lose the poisonous principle and becomes safe to feed, even quicker than shock fodder. If a cow eats only a small bit of the poisonous sorghum she may bloat up quickly and, unless tapped, may die of suffocation. Frequently, a cow which has eaten sorghum will get only enough to cause her to stagger and drop to the knees.

"Cattle running upon the stalk field may appear all right for several days when they happen to graze around in some particular spots in the stalk fields where the fodder is especially poisonous. Soon thereafter from one to a dozen may drop dead. Upon attempting to drive the cattle out of such a field an animal may drop dead on the way.

"Horses seldom eat enough of any of these fodders to cause instant death. Horses affected by eating the infected fodder usually first refuse to eat and drink. They show continuous colicky pains and generally bloat. The contraction of the bowels generally stops, and no rumbling sound will be heard on placing the ear against the abdomen."

[1]Missouri Yearbook of Agriculture, 51:468-470.

Ragwort Poisonous

The ragworts, of which there are a great many species in the United States, particularly in the Rocky Mountains (there are only a few species in eastern North America), have recently received some attention. The botanical name of the genus is *Senecio*. A recent number of the *Veterinary Record* (London)[1] contains notes on poisoning as follows: "It is no recent discovery that *S. Jacobaea* possesses in jurious properties, but the information has lain hid in a few textbooks, useless, and almost forgotten. It was mentioned in connection with horses in the *American Veterinary Review* six or seven years back; but so far as we know this present note is the first definite warning that the agriculturist in this country has received as to its effect on cattle. The plant is a common one in many districts, found frequently in poor pastures and waste land, but seldom in good pastures and rarely in arable. In old herbals it is called *Herbae Sancti Jacobi* or *Sancti Jacobi flos;* and in one it is, curiously enough, described as 'a certain remedie to help Staggers in Horses;' whence probably, its names 'stagger-wort' and 'serum'."

The following article probably taken from the *Farmers' Gazette* (Dublin) is reported in the Journal. "It is not generally

[1]Veter. Rec., London, 30: 89, 91-105.

known that the common British Ragwort (*Senecio Jacobaea*, L.) is poisonous to cattle. This probably arises from the fact that poisoning under natural conditions is a slow process, that is to say, an animal does not receive, and could not eat enough of the weed at one meal to cause acute poisoning. The poison is cumulative in its action; and with continuous doses the amount of poison which becomes available is sufficient in time to cause very serious symptoms, which often end in death.

"The following represent broadly the circumstances of the cases which have recently come to the notice of the Board of Agriculture. Pastures containing a considerable proportion of the weed were cropped in the hope that the comparatively early cropping might help to get rid of it. The crop was made into hay, and, owing to the prolonged spell of cold weather and the scarcity of other feeding stuffs, this was fed later and in considerable amount to animals at pasture. In the cases which have recently been inquired into in the Board's Laboratory, it was not possible to say definitely what quantity of ragwort had been consumed by the animals before symptoms of illness became visible, as the dried forage containing the weed had been simply dumped on the pastures, and the cattle allowed to partake of it at will. In one instance the feeding was known to have begun on the 21st of February and continued until the 17th of April, 55 days. The animals were then changed to other pastures, and feeding on the forage which was by this time under suspicion, was discontinued. The first visably affected animal was noticed on April 6th, 44 days after feeding on ragwort commenced. The time which elapsed between the first appearance of definite symptoms and death, varied from a few days to a month. Some of the animals died a few days after the appearance of definite symptoms. In others the symptoms continued for a month or more, and deaths occurred at the later dates. It would appear also that animals which have received a toxic amount of ragwort over a certain period may seem healthy at the time when feeding on the material is discontinued, may nevertheless develop active symptoms of poisoning and die at a later period. Thus, in the cases which have been investigated, some of the animals did not show definite symptoms until twelve or more days after the feeding with ragwort had been discontinued.

"In the early stages the animals have the appearance of being hide-bound. Later they walk with a staggering gait, some appear to be partially blind or heedless of where they go. Later they become very excitable and will charge at anyone who approaches them. In some there may be diarrhea, but usually constipation is so marked that it causes violent straining. The pulse is weak and rapid, but the temperature remains normal.

"When death takes place in the earlier stages of poisoning the principal lesions found are inflammation of the mucous membrane of the bowel. The omentum is dropsical. Small hemorrhages are present under the mucous membrane of the bowel and in the pericardium. In acute cases the liver is firmer than normal and yellow in color, the yellow color apparently arising from fatty degeneration of the liver cells. In chronic cases there is cirrhosis of the liver, and in such cases the abdominal cavity contains fluid. This is not unlike what is seen in some animals affected with fluke disease. The lungs are congested.

"It has not been definitely shown that sheep are immune to poisoning by ragwort, although this is a somewhat general belief. There is reason to think that the flowering season, June, July, and early August, is the time when ragwort is most actively poisonous. The question of whether flowering ragwort is poisonous to sheep is now being investigated at the Board's Laboratory. From the experience acquired in practice of grazing sheep on ragwort pastures during the winter and early months of the year, it would seem reasonable to assume that the practice is not attended by bad results. It may be, however, that sheep grazed, even for a comparatively short period, on ragwort receive damage to important organs like the liver."

A correspondent in a later number states:

"You state in your editorial notes of the last issue of *The Veterinary Record* that the first definite warning that the agriculturalist in this country has received as to the poisonous nature of ragwort on cattle is contained in an account of feeding results prepared by the Chief Veteri-

nary Officer to the Board of Agriculture (Ireland). This statement is not correct. Some years ago there appeared in *The Veterinary Record* a communication from Professor Gilruth, in which attention was called to the fact that ragwort was frequently a cause of cirrhosis of the liver in horses and cattle, the symptoms consisting in jaundice, ascites, diarrhea, wasting and weakness, and that experimentally two six-months-old calves, after daily feeding with ragwort, succumbed to liver cirrhosis.

Poisoning From the External Use of Wood Alcohol

It has long been known that wood, or methyl, alcohol is a dangerous poison.[1] It is used as a solvent in the arts. In refined forms in the United States it is sometimes used by unscrupulous individuals in the manufacture of flavoring extracts, such as "Jamacia ginger." Cases of poisoning have resulted from the use of these. Ill effects from inhalation when used in varnishes, have also been reported. The symptoms are headache, dizziness, nausea, vomiting, dimness of vision and often total blindness. In the Journal of Canadian Medical Association for March, 1918, Dr. R. E. McKetchnie reports a definite case of poisoning from the external use of wood alcohol.

"For a woman, aged 45 years, with a sloughy surface on the leg over the site of a compound fracture, he ordered an alcoholic compress. After two days' treatment she became very drowsy. After three days she complained of nausea and blindness; the face was flushed, the pupils were dilated, and the blindness was complete. Investigation showed that the alcohol used was the refined form of wood alcohol, Columbian spirits. In spite of the discontinuance of the applications she became worse, the temperature rising to 100° F., the breathing becoming hurried and the patient being stupefied. She recovered, but optic atrophy remained, and vision amounted only to distinguishing movements of the fingers. In this case the alcohol was applied to a raw surface for four days."

[1]London, Lancet 1:774, 1918.

PLANT POISONING

(*Continued from page 316*)

to places where there are but few poisonous plants is dangerous under conditions already mentioned, but nevertheless, much may be accomplished in preventing heavy losses by herding animals entirely away from poison weed areas.

Considering the immense area of grazing lands in Colorado, and the wide distribution of poisonous plants, their eradication, save in pastures or in certain restricted districts, seems like a hopeless undertaking. Plants that tend to grow more in patches, like the woody aster, monkshood, death camas and false hellebore, promise more in the way of extermination by the use of the grub hoe, than do loco, larkspur and lupine, which are more widely distributed. One instance came under observation in which all the loco weeds on a section of land, under fence, were removed by digging, and three years later the pasture was apparently as badly infested with loco weeds as before, much to the discouragement of the owner. The displacement of noxious weeds and poisonous plants by aggressive forage plants, has received some attention by the Montana experiment station and forestry service. For this purpose, the smooth brome grass and the western wheat grass, or "blue-joint," have been considered the most promising. It will require several years at least and much patient endeavor to form a sod with smooth brome grass, sufficiently thick to replace larkspur, camas and loco weeds, which are indigenous and very persistent. The prospect for eradicating poisonous plants by this means is not very encouraging.

CONTRACTED CERVIX RELIEVED BY OPERATION*

I was called to see a Jersey cow, five years old, in labor. The vagina had been somewhat enervated and protruding for several weeks, but would retract when the cow was gaunted. The os was hard and firmly contracted.

I operated by incising the cervix longitudinally through the upper side and delivered a fine heifer calf of the Shorthorn breed, hind feet foremost. The cow and calf both did nicely.

B. L. TERRELL.

Dresden, Tenn.

*Read before the Tennessee Veterinary Medical Assn.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the lasting gratitude of those who are aided by your suggestions.

Wherein the French Veterinarian Excels the American Veterinarian

I have been reading your Journal for some time, and it has occurred to me that some observations made while with the A. E. F., might prove of interest.

I did not get up to the front, but was in the vicinity of Bordeaux for some time and then was sent up to the Army of Occupation, and while at Castres, near Bordeaux, I had an opportunity to observe some of the peace practices of French veterinarians. While Division Veterinarian of the 34th Division, I was fortunate in being able to occupy the office of Captain J. Daubas of the French Army. The Captain was a reserve officer and was with the army at the front, and his wife learning that I was in need of an office, tendered me the use of the Captain's.

The office, occupying a portion of the residence, was located on the principal street of the village. The following is what I wish to call to the attention of the American veterinarian. The tiled-floor reception room was fitted with easy chairs, tables, books, flowers, and curtains. Adjoining this was the private office, in which were a library, microscope, two chairs, desk and the veterinary journals of the day. Off this office was the drug room, where it was plainly evident that the client was never admitted. From the private office, a door led to the street, so that the client might pass out that way and avoid passing through the reception room and go uninterrupted about his business.

Now don't immediately exclaim: "You could do that in a large town, but not in my town. I couldn't afford it." Look for Castres on the map and look up the population. I am not certain, but my remembrance is that the population is about 1,100. You can afford such an office, and the returns will surprise you.

Did you ever stop to think what an advantage it would be to have a private office where a client could come in and have a talk with you about various affairs without having to air his troubles before uninterested outsiders? In private conversation you can more readily gain his confidence, and incidentally put up a prescription for him before he leaves. Then if you have a nice little office where your books, ledgers and accounts are under lock and key, an inquisitive client will not be tempted to look over your accounts to see if you are charging him more than his neighbor is being charged.

Then there is the drug room. If I ever engage in practice again, I will never allow a client to enter my drug room. It is not his business and he should not be permitted there, for he does not understand and may get false ideas by watching you use drugs in making up prescriptions.

I believe that the reception room is another good idea that we might well adapt from the French, Germans and Luxembourgers.

I did not stop long enough in England to see an English veterinarian at his work or in his office. But he has his reception room supplied with periodicals (all of recent date) and some good books covering

recent events; something that will keep a client occupied while waiting, and they don't insult him by putting out magazines of an early vintage and decorating the walls with pictures of "Capewell's Horse Shoe Nails" and "Kendall's Spavin Cure" ads and other similar decorations. They place on the walls pictures of real merit, and the office presents evidences of prosperity and is clean, neat and inviting.

The veterinarian is looked up to as one of the leading citizens in his town, and his office and residence are pointed out as one of the show places of the town. He does not place a revolving horsehead or a swinging horseshoe over his door, but a brass name plate appears on the door—inconspicuous but easily seen. The windows are C-L-E-A-N and the curtains white. The reception room is not redolent with iodoform, liquor cresolis and such other delightful odors that usually make life so "antiseptic" in the average veterinarian's office. The drug room is some distance away from the reception room, and no odors emanate therefrom.

Did you ever give much consideration to these things? Stop and think how often men come into the city or town and would like to come to your office and talk over the lameness of this horse or that, or ask you about the udder trouble his cows are experiencing, or why his pigs are coughing in a certain manner, but when he comes into your office and finds there a man ensconced, with a long busy tongue haranguing about the "Washington gang" ad lib, he is reluctant to tell what he came to consult you about and goes away disgusted, and you may have lost a client, or at least the price of a prescription. If you had had a quiet place for a confidential talk, you would doubtless have given him some good advice and bound him to you and rendered him a real service.

Should I ever engage in practice again, my first investment would be for some good substantial office furniture, some attractive pictures, some rugs and, last but not least, a microscope. I will have three rooms in my office, or none, and my library will not be in the reception room but in my private office. While I have confidence in the average client, "a little knowledge is a dangerous thing"; that which is read with little understanding is much more dangerous. Since few men can read technical books with any degree of understanding, why tempt them with my library and scientific periodicals?

I am frequently asked whether I think the French and German veterinarians are as efficient as the American. This is difficult to answer fully, as we are all practicing under such different circumstances. I believe that the average American veterinarian is more resourceful than either the French or German. These veterinarians do not go far from their home towns; they do not experience the handling of wild rough stock; they know their clients intimately, as few people move from place to place; they have good stables to keep their cattle and horses in; they have the cooperation of their clients in carrying out the minutest detail. They have excellent roads to travel over, and the fees are so large that the clients do not wait until a large number of trips are involved. The live stock is so valuable that every precaution is taken to protect it.

I cannot imagine a French veterinarian driving out some thirty miles expecting to find a sick cow and a lame horse, but on arrival finding a colt with a nail in his foot and a devil in his head, and a locoed bull or a bull with a wire-cut and so mean and ugly he couldn't be controlled. No, indeed, Jacques or Henri come to the veterinarian's office and tell him just what the trouble is, and he drives out about *"cinque kilometers"* and finds a nice quiet old cow and a docile horse, plenty of help, and a client that will follow his directions explicitly. The same is true of the German practitioner.

Then, also, the breed of animals in a given area is the same; the feed is the same; and the housing and working conditions are the same, so it makes it difficult to determine whether they are more proficient and successful than the American practitioner or not.

In France and Germany, an animal may be under treatment for six months and no complaint from the client, but try to carry out a treatment for that length of time in this country and see what happens.

I believe that, on the whole, our veterinarians are as proficient as any to be found anywhere, and we can meet emergencies with more readiness and grace than any other veterinarians in the world. We were

the ones who met the mange and cured it and did it in less time than any others, and we found that mange is a common and very prevalent disease in France and Germany.

I am not saying that we are the most thorough, but we can, and do meet emergencies with alacrity and despatch. The others may excell us in patience, thoroughness and in diagnosis, and this is due largely to the factors explained above.

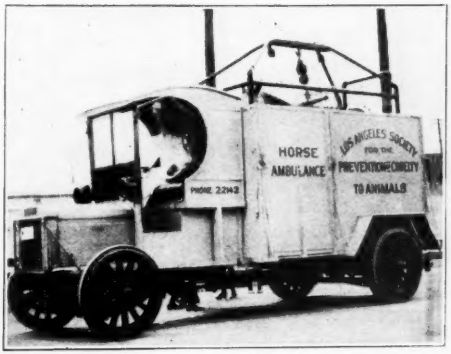
This is presented with the hope that the idea of the appearance of the office and surroundings may arouse some interest in some practitioner who has been of the opinion that it wouldn't pay to keep up an office, and cause him to strive to be more careful in his personal appearance and in his office.

CLELL B. PERKINS.

San Antonio, Texas.

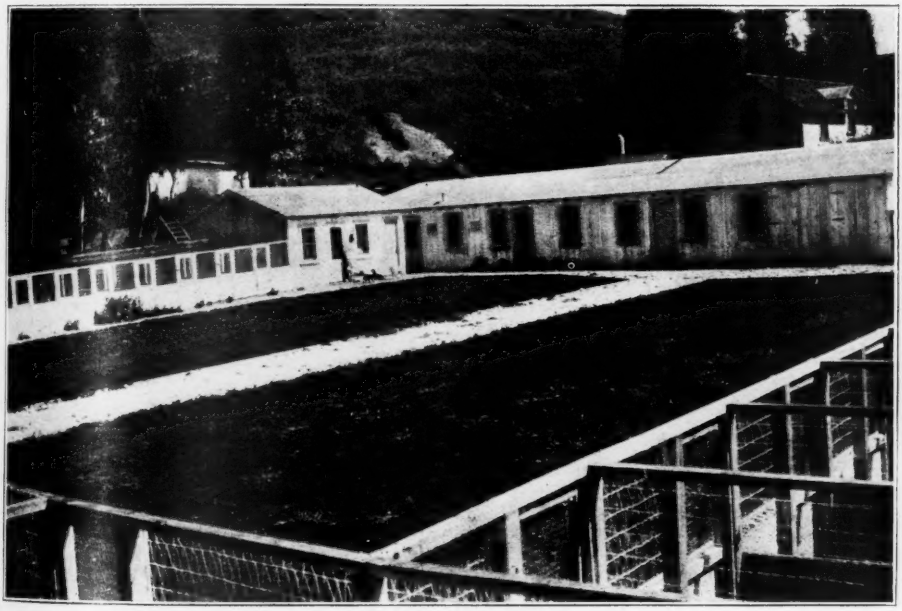
$6,000 HORSE AMBULANCE INSTALLED BY LOS ANGELES S. P. C. A.

The accompanying illustrations tell better than words of the two hospitals and



Ambulance loaded ready for a "hurry up" trip to the hospital.

equipment used by the Los Angeles (Calif.) Society for the Prevention of Cruelty to Animals. The horse ambulance, as noted in the several pictures, involves several new features in ambulance construction, which we are told have proved by experience to greatly facilitate the handling of sick and injured animals. The total cost of the machine was about $6,000.00, which



Dog and cat hospital and home maintained by the Los Angeles Society for Prevention of Cruelty to Animals. Only stray animals are handled. A free clinic is maintained for those unable to pay. No fees are charged, but there is no infringement upon the business of practicing veterinarians.

Animal being removed from ambulance through side door.

sum was donated to the society by Mrs. Anita M. Baldwin, the president of the society. The chassis is a two-and-a-half-ton Doane truck. This truck made in San Francisco is said to be the only truck made that has the drop-axle feature so essential in the construction of a horse ambulance. The bottom of the bed is only twenty-four inches from the ground. The machine has been in use only about a month, and has been very highly commended by veterinarians who have seen it operated.

Two hospitals are maintained by the society, one in the center of the city being equipped to handle and care for any and all kinds of sick or injured animals. It comprises a complete hospital, operating room for large and small animals and a dispensing pharmacy. The other station is devoted to the care of small animals—a modern operating room being one of the main features.

Dr. Richard M. Scott is chief veterinarian of the Los Angeles Society for the Prevention of Cruelty to Animals, and both institutions are under his supervision.

IS DISPENSING MORE PROFITABLE THAN PRESCRIBING?

In the locality in which I have been practicing for the past seven years, I was preceded by a veterinarian who had lived here for five years and was considered by the druggist to be a successful man. He was an excellent veterinarian, but the druggist favored him because he wrote prescriptions.

Being just out of college I endeavored to follow him as closely as I could, for I could see that he had quite a number of prescriptions on file in the drug store, and unless I duplicated his methods I was afraid I would be a failure.

Horse ambulance with tail-gate down, and platform extended. Horse shown suspended in sling stocks.

So for seven years I kept in the good graces of the "pill-roller" by increasing his profits and at the same time decreasing my earnings through my lack of foresight.

About the middle of last January I attended a post-graduate school course given by the Washington State College at Pullman, Wash., and while there I met several men who had the largest practices in the West. In conversation with these gentlemen I found that I was the only one that wrote prescriptions. Dr. John McKenna of Fresno, Calif., was among those present, and I am informed that he has the largest veterinary practice in the State of California. He told me that the most profitable part of his business was the sale of drugs and biologics. I came home and concluded that I would do my own dispensing in the future.

"I told one of the clerks in the drug store what I intended to do. He promptly told me that I was making a mistake and that if I started to do anything like that, they would push their patent medicines more than in the past.

I opened up a larger office and put in a supply of drugs and biologics, got some labels printed; put in new shelves, and started to do business on a new plan.

After these preliminary operations, remembering that a great many people like to get all they can without paying for it, and as many of my prescriptions were on file at the drug store, I wondered if possibly I had not made a bad move after all.

It was not long before I had a few cases that needed considerable medicinal treatment, and in addition to the charge for the calls I sold the owners quite a quantity of medicine. From that time, I have never regretted the change I made. I can assure any veterinarian in practice, that doing your own dispensing is the only way to protect yourself and increase your earnings. It brings the owner to you, and it is not empirical, for all the quacks I ever knew wrote prescriptions.

One more point. Don't patronize drug houses that sell to the laity. Most of the wholesale veterinary drug houses are O. K., but I know of one or two concerns that will sell to anyone with a check book. Those that sell to veterinarians only, or put on their labels, "To be used by a veterinarian only," are the ones deserving of our patronage.

A. R. GALBRAITH.

Garfield, Wash.

COMMON SHEEP DISEASES*

The sheep industry in Indiana dropped into insignificance a few years ago, largely due to the common diseases that made the business unprofitable.

The scarcity of sheep in this country today has naturally sent the prices soaring to the sky and has awakened an interest which promises to resurrect this industry.

Stomach Worms

The one disease most troublesome and destructive in Indiana has been the stomach worm—haemonchus contortus. In their adult form these parasites live by sucking blood from the mucous surface of the stomach. According to Law, the immature form lives outside of the body in foul, stagnant water and damp soil. Permanent pastures favor their existence, and such pastures should be divided, thus eliminating their breeding places. Lambs and yearlings are affected the most severely, but no age is exempt.

SYMPTOMS. Gradual loss of condition and appetite, paleness of the mucous membrane, unhealthy wool, diarrhea with black discharge fouling the tail and hips.

The trouble is most prevalent during the summer and fall.

POSTMORTEM. The mucosa is usually very pale and at times bloody and ulcerated. The stomach is usually dilated. The animal is very anemic. There is an excess of water and a deficiency of red corpuscles in the blood. Worms are rarely seen in the feces, but a close search may disclose the embryo.

PREVENTION. Avoid pasturing sheep on low, damp land or on infected pastures that have been overstocked with sheep early in the season. A change from one pasture to another is absolutely essential to ward off this trouble. Free use of salt and a rich and abundant diet are recommended highly by Law. A rotation of cultivated crops and the exclusion

*Read before the Indiana Veterinary Medical Association, Jan. 10, 1918.

of sheep and cattle from the field will render land safe for pasturing purposes.

TREATMENT. Many cures are recommended and advertised, but arsenous acid in combination with other tonics has been found to be the most effective. The formula is as follows:

Arsenous acid	1 dram
Sulphate of iron	5 drams
Powdered nux vomica	2 drams
Powdered areca nut	2 ounces
Common salt	4 ounces

Nodular Disease

Nodular disease is very prevalent, both in Indiana and the Eastern states, but it is not as serious as many believe. The parasite that causes the trouble is known as the *Osophogastoma columbianum*, discovered by Cooper Curtis in 1888. Its history is unknown from the passage of the egg with the feces to the entry of the embryo with food or water and its encysting itself. From the cyst, however, it escapes into the intestines, reproduces its kind and dies. The worm is very small, being only one-eighth to one-sixth of an inch in length. It may be found in any part of the intestine.

This disease is most prevalent during the winter and early spring, breeding ewes being particularly affected. The nodules that appear on the mucous surface of the intestine are usually surrounded by some greenish debris, especially after they have developed to a noticeable size. These nodules have been confused with tuberculous nodules by some, as they often contain a yellow, cheesy matter. The larger nodules are usually partially calcified. The interference with digestion and nutrition is responsible for the deaths that occur from this disease.

The same preventive measures should be practiced as recommended for the prevention of stomach worms—plenty of salt, change of pasture, and pure drinking water—and the owner of the flock will have little need to worry about intestinal parasites.

Paralysis of Breeding Ewes

The term paralysis characterizes this disease of sheep. However, it does not affect breeding ewes only, but their pregnant condition predisposes them to the disease. There is no difference between the susceptibility of thin, debilitated sheep, and animals in medium or high condition of flesh. The season of the year and the weather conditions seem important factors in the development of the disease. In January, February and March when stormy weather continues for several days and the snow becomes drifted about the yards, or the yards become knee deep with mud, sheep take little exercise. Under such conditions the flock is closely housed or confined in small yards, and the animals suffer from lack of exercise, and this seems to be the causative factor of the disease.

Medical treatment is usually unsuccessful after the nervous symptoms have developed. When the disease occurs in a flock we should recommend forcing the apparently healthy animals to take exercise by driving them about the lot. All of the animals should be given a physic, preferably linseed oil, and if they are in a high condition of flesh, the ration should be reduced.

Septicemia Hemorrhagica

This is an infectious febrile affection, acute or chronic, characterized by stiffness, anorexia, disorder of the breathing and digestive organs, reddish effusions in the connective tissue, congestion or inflammatory lesions of the lungs, liver, kidneys, and intestines.

The cause is the *Bacillus ovisepticus*. Lambs are most susceptible to this disease. However, it is common among old sheep also. In the acute stage it is not uncommon for lambs to sicken and die in twenty-four hours without showing any striking symptoms of the disease. Postmortem examinations in such cases show a hemorrhagic infiltration of the subcutis, hemorrhagic lymphadenitis in the region of the head, and at times hemorrhagic tracheitis. The subacute stage is characterized by a discharge from the eye and nose and by dyspnea. It terminates fatally, as a rule, within fourteen to twenty-one days. Autopsy reveals pneumonia and pleuritis. The chronic stage occurs in young and old animals, and is characterized by emaciation and respiratory disturbances. A flabby condition of

the muscles and fluid in the serous cavities are found on postmortem.

L. C. KIGIN, D. V. M.

Lafayette, Ind.

STRANGULATION HERNIA FATAL AFTER NINE DAYS

On the evening of June 30th, one of my clients called at my office to consult me regarding one of his work horses. This animal, a brown gelding, weighing about 1,400 pounds, he informed me, had a swelling about the size of a man's head in the region of the sheath. He could give me no idea as to the consistency of the swelling, but was of the opinion that the sheath needed "cleaning out," as he expressed it. He stated that on June 23rd, this animal had shown signs of colic, would lie down, roll, etc., at this time he first noticed this enlargement. In an hour or so, the condition of the animal had improved; in fact, to all appearances he apparently was all right in every way, and felt good, and so continued since with the exception of the swelling.

I could give him no definite information as to the cause, and suggested that I call the following day. This, however, he declined, saying he would call me if anything should be wrong.

Early on July 2nd, I was called to see this animal. I found it in the throes of severe abdominal pain, rolling and tumbling about, sweating profusely, temperature 104.5° F., small rapid pulse, wild staring countenance. There was present in the lower right flank a large fluctuating swelling.

I diagnosed the condition as strangulated hernia, and advised an immediate operation.

The animal was cast, and laid on his back and kept there by means of straw-filled sacks. Profound anesthesia was administered and the casting harness removed as some of the straps interfered with the field of operation.

The animal at first took the chloroform badly but after three attempts the pulse and breathing became regular and the excitement subsided and a good anesthesia was obtained.

The swollen region was carefully cleaned, shaved and painted with tincture of iodin. I then made an incision through the skin over the strangulation and exposed the contents of the hernia.

The sacculation was filled with a bloody exudate and contained about ten or twelve feet of bowel. The bowel contained within this sacculation was thickened, friable and necrotic to a degree that seemed hopeless. I pushed the chloroform to fatal determination.

The unusual aspect of this case, to my mind, was the length of time that this condition persisted, without any apparent pain of discomfort, i. e., nine days, and also the very small orifice through which the bowels protruded—not more than two or three inches in diameter.

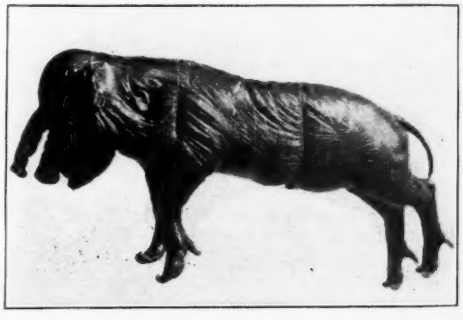
A. M. ANDERSON, D. V. M.

Luverne, Minn.

SEEING THINGS, NOTWITHSTANDING THE 18TH AMENDMENT

I am sending you a photograph of a freak pig which I thought might be of interest to you and your readers.

This pig was born May 7, 1920, on a farm adjoining Sioux Rapids, Iowa. The mother was a Hampshire sow. She gave



Whether this member of a pig litter delivered on the farm of Wm. Leighton, Sioux Rapids, Ia., by Dr. P. L. Talbot, is an augury of the success of the G. O. P. in Iowa this fall, remains to be seen.

birth to four pigs, two normal and two elephants. Whether this is an indication that the G. O. P. will carry Iowa this fall or not we will leave for your determination.

This animal had a perfect hairless skin, large flat ears and three tusks. The trunk was perfectly formed, with a cavity all the way through it. I have the monster preserved in formalin and will present it to some museum.

P. L. TALBOT.

Sioux Rapids, Iowa.

MATTERS AFFECTING B. A. I. WORK

A reduction July 1 of the hog-cholera field force of the department of agriculture, which has been working in co-operation with the state veterinary forces and with private stockowners throughout thirty-five states of the union, from 140 to 54 men is made necessary by the reduction by congress of the appropriation for hog cholera work from $641,045 for the current year to $410,000 for the coming year. Out of this item is allotted $188,280 for the enforcement of the virus serum act and $29,520 which is made available for research work of the biochemic division, so that only $192,200 is left for the field work as against $446,865 during the present year. This, Dr. Houk says, will necessitate the bureau withdrawing entirely from some of the states and abandoning certain phases of the work in other states.

The work for eradication of tuberculosis in animals fared better in the senate than in the house, and that branch restored to $1,480,440, as estimated by the officials for the department, the item which the house had cut to $1,300,000. In conference the house accepted the restoration. Of this, $680,440 is set aside for the payment of indemnities where animals infected with tuberculosis are destroyed, where the house set aside only $500,000, so that the actual appropriation for administrative and operating expenses passed both branches at the same figure, $800,000, of which $100,000 is immediately available to carry on the work now in progress for the current year, which was overrunning somewhat the estimate made at the beginning of the year.

The appropriation for investigations of other animal diseases is left where the house passed it, at $106,400. The department had asked for $141,450, and the senate passed it at $139,800, but the senate conferrees receded before the bill finally passed.

ARMY COMMISSIONS FOR VETERINARIANS, WAR PICTURES, INSURANCE

Those who are desirous of doing so, may obtain information on the following subjects from the Adjutant of the World War Veterinarians of America:

1. WAR PHOTOGRAPHS: Photographs pertaining to veterinary matters, taken both in Europe and America, may be obtained from Washington at fifteen cents each. There are about one hundred photographs available. State the place and nature of picture to the Adjutant W. W. V. of A., so that its catalog number may be determined, and the number with title will be sent you so that you may order it direct.

2. WAR RISK INSURANCE: Those who are allowing their Government insurance to lapse through neglect of reinstatement and conversion to a more desirable form of insurance, are making a grave mistake, since there is no cheaper and better insurance obtainable than that offered by the Government. Write for detailed information.

3. VETERINARY DIVISION, OFFICERS' RESERVE CORPS: A recent letter from Col. Morse, director of the veterinary corps, gives the following information: "All veterinary officers who served honorably during the World War, are eligible for appointment in the veterinary division officers' reserve corps". Requests for appointment should be made direct to the Adjutant General.

Regarding appointment in a grade with rank above the grade from which the individual was discharged, the following ruling has been made by direction of the Secretary of War: "In no case will such advancement be more than one grade at the time of appointment. This advanced grade is not granted in all cases, but is based on the service record of the individual."

4. INCREASE PAY FOR ARMY OFFICERS:

A very material increase in the pay for officers, which has just gone into effect, should make army service more attractive than it has been in the past. Base pay, including commutation of quarters, heat and light, is, as follows:

Second Lt., $2,562.60; First Lt., $3,225.32; Capt., $3,923.25; Maj., $4,819.02; Lt. Col., $5,254.10; Col., $5,927.80.

5. WORLD WAR VETERINARIANS OF AMERICA: Many advantages are to be derived by joining this society, to which all veterinarians who served during the World War, are eligible for membership, whether they held a commission or not. Don't be a laggard; get busy and join. The next annual meeting will be in Columbus, Ohio, at the time of the meeting of the American Veterinary Medical Association.

Any information regarding the above subjects, including application forms for reinstatement and conversion of war risk insurance or appointment in the Veterinary Division Officers' Reserve Corps or in the Regular Army, may be obtained by writing to the Adjutant, World War Veterinarians of America, whose address is: Dr. A. A. Leibold, 510 Portsmouth Building, Kansas City, Kansas.

A. A. LEIBOLD,
Adj. W. W. V. of A.
Kansas City, Kansas.

WIRE IN ESOPHAGUS SAFELY REMOVED

On January 27 I was called to see a cow that appeared to be choked on cotton-seed hulls. I administered a half grain of arecolin hydrobromide, and in a few minutes she slobbered the hulls out and seemed to be all right again.

A few days later, the owner called me on the phone and said that each time the cow was fed she seemed to choke.

On Feb. 17th, the owner called at the office and told me that the cow was not doing well, and that each feeding resulted in a fit of coughing. At my request, the animal was brought to my hospital. Examination revealed a foreign substance in her throat. As both the owner and myself were anxious to see what the obstruction was, I proceeded to operate. I opened the left side of the neck, and about halfway between the pharynx and the stomach, found a piece of wire about three inches long that had penetrated the esophagus, the point lodging in the muscle. The largest portion of the wire was inside the esophagus, and as it was considerably twisted it made quite a bulky obstruction, so that attempts to swallow, even water, caused fits of coughing.

I removed the wire through the esophagus and bandaged the wound with absorbent cotton, and to my surprise the cow recovered and is now milking and doing well.

W. A. HARRIS.

Tuscaloosa, Ala.

TRI-STATES VETERINARY CLUB MEETING

A well attended meeting of this club, which includes Pennsylvania, Delaware and Maryland, was held the evening of May 25 in Leonard Pearson Hall at the University of Pennsylvania, Philadelphia. Doctor Herbert was chosen chairman. Doctor J. F. DeVine of Goshen, N. Y., editor of our department of cattle practice, was the speaker of the evening. He spoke on abortion disease, retained placenta and sterility. This subject proved to be of great interest and nearly everyone present participated in the discussion.

Doctor Gilliland expressed his interest in the problem, and spoke interestingly and at length on the different phases of the subject, particularly discussing the biological treatment of the disease, and gave as his opinion that, judging from the nature of the disease, he thought a true vaccine would some day be found to master this scourge; also stating that it was not quite clear to him why better results are not secured from auto-vaccinating when the organisms are found so frequently in the udder for such long periods.

Doctor Werner added much by his discussion of vaccine therapy. He explained that probably the lack of auto-vaccination of the udder might be likened to the condition that apparently exists in septicemia hemorrhagica, the organisms being present in the lungs, without giving immunity, but when introduced under the skin, are very effective. He asked Doctor DeVine's opinion as to what influence on the number of cases of sterility, would the prevention of abortion and retained placenta have if these two conditions could be eliminated.

Doctor DeVine believes that if abortion

disease could be entirely suppressed and the breeders could be induced to allow their cattle to live more normally, that is, allow them to live more in the open, breed them earlier after parturition, and not feed them quite so liberally of high protein feeds, that the sterility specialists would soon be out of a job.

Doctor Eves of Wilmington, Delaware, was one of the most interested men in the audience. He gave a splendid account of his experiences and results gained in the irrigation of the uterus and massaging of the ovaries and uterus. In one of the large herds under his supervision, that had suffered severely from abortion, a living vaccine was used which apparently reduced the number of abortions at once, but there was still a great number of retained placentas, notwithstanding that the calves were carried full term.

Doctor T. E. Munce stated that Pennsylvania is giving gratuitous instruction to her veterinary practitioners, in this work, which should prove a splendid opportunity for the practitioner and be of great value to the live stock industry. He also stated that his department intends to take up some experiments on cattle to determine the value of a vaccine composed of virulent organisms in producing immunity. This should help materially in gaining the information the field man is so desirous of having.

Doctor Ormster expressed his interest in the discussion and particularly in the subject of retained placenta.

Doctor Hickens gave some splendid information, citing a case in which the bull proved to be sterile. As many of the females failed to conceive, it was decided to test the semen of the bull, and the spermatozoa were found to be without tails.

The question of blood reaction was then discussed by several, and Doctor Gilliland asked if Doctor DeVine had had any experience in taking blood samples from virgin heifers to determine if their blood would give a reaction. Doctor DeVine replied that he had known where heifers' blood had given a reaction, and cited a case where a steer's blood was sent to a laboratory and the report given stated that the blood sample gave a pronounced reaction.

Doctor DeVine then asked if any one had taken blood from several herds to determine if there were herds in which no reaction would be obtained from blood samples.

Doctor Werner stated that he had known of instances where samples had been taken from all animals in small herds, in which all samples gave a negative reaction. He cited another herd which had always been free from any suspicion of abortion, the blood samples being negative, with the exception of one cow that had just been added to the herd. This cow's blood reacted, and upon looking up her history it was found she had aborted the year previous.

Drs. Snyder, McCarthy and Deck, among others, entered with much interest into the discussions on the different phases of the subject.

DIRECT OPENING BETWEEN RUMEN AND PERICARDIAL

A valuable Jersey cow was apparently in good condition until January 6th, when I was called. The owner advised that he had given her a dose of salts the afternoon before, and her bowels were apparently working nicely. She had been constipated for about a week. I could find nothing further abnormal.

Two days later, the owner called me again.

Upon my arrival, I found the feces normal but scanty, peristalis of the rumen and other bowels was normal. The pulse was greatly accelerated, and upon auscultation, I found the heart pounding away with a splashy sound, which could be heard several feet away.

My diagnosis was a foreign body, probably a nail, interfering with the heart. I administered camphorated oil and put her on nux vomica, which seemed to improve the heart action some by the next day. She refused to eat, but would drink a little. I advised the owner that she would die in about three or four days, and to call me as I should like to post her.

Upon autopsy, I found the rumen adhered to the diaphragm, which when torn away left a little pyogenic membrane, a veritable "pipe" which led into the pericardial sac. There was a ten-penny nail piercing the left ventricle. The pericardial sac was about a half inch thick, of a greyish green color, and about two or three gallons of the same fluid in the pericardial

cavity, which contained particles of food. Apparently the liquid contents of the rumen passed directly into the heart cavity.

S. W. HAIGLER, D. V. M.
Bellflower, Ill.

TEAM WORK BETWEEN VETERINARIAN AND COUNTY AGENT URGED

What should be the relationship between the veterinarian and the county agent? There is but one answer. They should be team-mates. They should work shoulder to shoulder. They have the same end in view, or should have—that of saving the live stock of the country. The county agent has a wider field to cover than the veterinarian, who devotes his time exclusively to the treatment of animals for disease. The county agent has prepared himself for the work of helping the farmer to increase production, maintain the fertility of the soil, assist him in marketing his crops, etc. The veterinarian has prepared himself for the work of preventing and treating animal diseases. Naturally the veterinarian should be expected to know more about the treatment of animal disease than the county agent. There is the further possible difference that the county agent works on a salary and the veterinarian is paid for the work that he does for individual farmers.

Questions that arise in the minds of you veterinarians are no doubt somewhat as follows: How far should the county agent go in the way of giving veterinary assistance to members of his association? Should he treat hogs for cholera? Should he administer bacterins? Should he attempt to diagnose cases? Should he supply worm capsules and help members administer them?

I do not believe that county agents should take it upon themselves to treat hogs for cholera. Very few of us would be safe in making the diagnosis. It is not a simple task for the skilled veterinarian. Should the county agent make a mistake in diagnosis, his reputation and influence in the county would be injured. The county agent can, however, be of great assistance to the farmer in aiding him to guard against introduction of the disease, by instruction in preventive measures.

I believe, in view of the serum situation, that it would be entirely within the province of the Farm Bureau to purchase and keep on hand a good make of material for use in the county by members of the association, the material to be administered by a competent veterinarian who should be paid a professional fee for his services. I believe that it would be to the interest of both the farmer and the veterinarian if this were done. It would relieve the farmer of the fear that the veterinarian is reaping a big profit from the sale of the serum besides his fee. It would increase the number of herds treated for cholera and therefore lessen the losses from this disease. This would come about through greater confidence on the part of the farmer. I believe that better and more uniform material would be secured where it was sold to an organization like the Farm Bureau.

I believe that the same might apply to the purchase of bacterins, etc. While it is not a dangerous operation to administer these materials, there is always the chance of improper diagnosis and wrong dosage.

With reference to worm capsule and other remedies for worms, I believe that the Farm Bureau can be instrumental in inducing farmers to use larger amounts of these materials and therefore save the farmer hundreds of dollars that would be lost through the waste of feed or through the purchase of worthless materials for this purpose. Not one farmer in a hundred will call up the veterinarian to come out and treat his pigs for worms. If the county agent can help the farmer in this way it will be a benefit to the farmer and no loss to the veterinarian. I believe that where the proper material can be secured locally that the farm bureau should get the material there rather than send away for it, provided the difference in cost is not prohibitive.

This, in general, outlines my views on this matter, and I have given the subject much thought. I believe that it is also the feeling of the majority of the farm bureau men in the state. There have been

*Read before Northwestern Illinois and Southwestern Wisconsin Veterinary Medical Assn., Freeport, Ill., October, 1917.

differences between the two classes of men in some counties of the state which, I think, have been due to a lack of understanding of the purposes of the county agent and possibly an over zealous desire on the part of the county agent to render service to his members, regardless of the fact that in doing so he might be missing the main goal through lack of the proper co-operation with all agencies for the control of disease.

I believe that the county agent can be of great service in overcoming the universal negligence on the part of the farmer to call a veterinarian when one is needed. How many stockmen will hesitate in calling assistance until one, two, three or half a dozen hogs are sick or dead? If a horse or cow is sick the owner often waits until the animal is beyond recovery before he calls the veterinarian. Why does he do this? Does he want his animals to die? I hardly think he does. It is partly due to the fact that he often does not realize the seriousness of the ailment or the danger of its spread among the rest of the herd. It is largely, however, due to the fact that he thinks veterinary services are too high. He does not stop to think. When a veterinarian charges him five dollars for a trip, the farmer figures this way. "The doctor was here a half hour and he charged me five bucks. Pretty high wages—ten dollars an hour." He forgets that the veterinarian has had to spend several years in preparation for this work, during which time he not only was earning nothing but was putting out good money to get the education. He also forgets that the veterinarian must maintain an office and equipment and that he is not getting ten dollars for every hour of the twenty-four. This is not the attitude of all farmers. We have some who believe that a "stitch in time saves nine" but nevertheless the attitude is quite general, as we all know. I have considered it my duty to advise stockmen to call assistance at the first sign of trouble so that it may be checked before it spreads.

Should Teach Sanitation

The county agent should, of course, do all in his power to teach sanitation, so much needed everywhere. He needs the assistance of every veterinarian in this matter also.

The statement is often heard that since the decline of the horse business, the veterinary business is on the wane. Anyone who travels over the country, however, knows that there is plenty of business to keep every veterinarian on the jump. Everywhere one finds more or less hog trouble. Chickens die by the thousands. Cattle and calves are taken by septicemia. Dairy cattle by the hundreds are afflicted with contagious abortion and tuberculosis. Is the farmer spending any money to combat these diseases? Yes, lots of it. But the veterinarian gets only a small slice of it. Thousands of dollars are spent for fake remedies. Full-page advertisements in farm and local papers, hog remedy agents, life-sized models of sleek hogs in windows, all allure the farmer and pry him loose from his hard earned cash.

What are we going to do about it? I don't know. It is up to the veterinarians to work out. It seems to be the ethics of the profession to wait for the farmer to call for help and not to advertise his services. I believe that so long as this condition continues, the distant manufacturer of remedies will continue to get the business. Why should not a veterinarian keep in close touch with the farmers in his territory? Why should he not use a mailing list and write them occasionally? Why should he not advertise his services? Why should he not arrange with a group of farmers in a neighborhood to treat all their hogs on a certain day for worms. The cost would be lessened and more good would be accomplished. Perhaps these ideas would not work out but they look plausible.

We county agents are confronted with some very pointed questions occasionally. Why did it cost me $1.00 to get my hogs treated for mixed infection when Jones had his done for 25 cents each? Why did this man charge me $5.00 for that trip when this other man did the self same work for three dollars. It is mighty hard to answer these questions, to the satisfaction of the farmer. We must admit that we do not see why there should be such variations. It is plain that one man was either using material that cost less or was using a smaller dosage or else was not getting proper pay for his services; or that the other man was getting more for the material and his services than was justified. I do not know which is the case for I am not familiar with the prices of the different

brands. I do know of several herds that went untreated because the farmer thought the charge was too high. I have been asked whether I could not obtain the material for a farmer and let him administer it himself. I know of herds that have been treated with material obtained from mail order houses. There is no use dodging the issue. It exists and swine breeders will not be satisfied until it is settled for them satisfactorily.

I believe veterinarians should take pains to follow up their cases. After a herd of hogs has been treated, call up the farmer occasionally and see how they are coming along. Failure can many times be turned to success by doing this and the farmer will be better satisfied.

In my year and a half of work in this county I have met with a hearty spirit of co-operation on the part of the veterinarians and I have tried to co-operate to the fullest extent with them; for I repeat the statement that we have every reason to work together as a team and no reason whatsoever to seesaw.

G. F. BAUMEISTER,
Freeport, Ill. County Agent.

TOXIC GASTRO-ENTERITIS IN EQUINE

In a shipment of 83 horses arriving in Champaign, Illinois, last month, the animals were unloaded in apparently good health. Two days later three animals were dead and one was ill for several days before death occurred. The symptoms observed were depression, languor, which could hardly be regarded as indicative of illness, had death not occurred. The heart-action of the affected animals was markedly disturbed, and cardiac failure was probably responsible for death. The mucous membranes were cyanotic and thirst prevailed. Animals in the later stages of the disease displayed incoordination of movement and suffered from fetid diarrhea.

It was learned that these horses had been confined in cars thirty-six hours during shipment, without feed or water. Fatigue or exhaustion is regarded as a predisposing cause of the enteric disease observed, and it is presumed that the vitality is lowered, enabling parasitic pathogens in the equine intestinal tract to gain an upper hand on the host.

Investigation conducted by the Veterinary Corps, U. S. A., suggest that certain organisms of the paratyphoid enteritis group were related primarily to some losses of similar character in American horses and mules, subsequent to shipment.

A bacterin of unknown value, including the organisms associated with the spontaneous disease, was given to all animals in the shipment. Following a subcutaneous injection of 2 c.c. of heavy killed suspension, several animals suffered transitory reaction. The temperature was 105° F., accompanied by dullness and frequent lifting of the feet. The nervousness passed away in two or three hours.

I. B. BOUGHTON,
Laboratory of Animal Pathology.
University of Illinois,
Champaign, Ill.

ALL VERMIFUGES FAIL ON A YOUNG MARE

In November I was called to see a horse, which upon examination I found somewhat emaciated; feces soft and frequent; otherwise the animal seemed normal. I advised the owner that the trouble was probably due to worms, but he said he had seen no worms pass.

However, I administered two worm boluses on an empty stomach. The next day the owner called and said the patient was "scouring something fierce." Upon my arrival, I could conscientiously verify his statement. This scouring persisted, the patient gradually growing weaker. I administered a tonic, but the feces remained as before. Several adult worms passed. I put the patient on iron, arsenic and strychnine tonic. She seemed to improve for a few days, and then became worse.

In the course of the next three weeks, I think I tried almost everything in the way of vermifuges, but they only threw her off feed and make her very weak.

She was finally destroyed and upon autopsy, I found the intestines literally packed with round worms, varying in length from one and a half inches to eight or nine inches. I filled a five-pound bucket with them and venture to say that I could have collected twenty pounds. The entire intestinal tract was opened and they were found from the stomach to the rectum, being more massed in the small colon.

This was a five-year-old mare, and was doing fine until a few days before I was called to see her. What puzzles me is, how she lived as long as she did with so many worms, and why did she go bad suddenly? Perhaps some of your readers can suggest a better treatment, if there is a treatment, for I tried almost every vermifuge given in the pharmacopeia.

S. W. HAIGLER, D.V.M.

Bellflower, Ill.

REFUSED TO OPERATE ON MORIBUND PATIENT*

I was called July 9, 1915, to see a Jersey cow, eight years old, and found she had been in labor two days. I examined her and could not insert my finger into the tightly closed os, nor could I pull the cervix back to any extent. I did not operate as the cow looked as if she would die any minute. I gave her a stimulant, but in four hours she died. The owner opened the carcass and found a dead calf badly decomposed. I was severely criticized for not delivering her.

B. L. TERRELL.

Dresden, Tenn.

RUPTURE OF UTERUS DUE TO ROUGH HANDLING*

I was called December 9, 1907, to see a Jersey cow, four years old, that had been down about a week, had no appetite and was badly bloated. I examined her and found the os contracted. The owner stated that the cow was fifteen days overdue to calve. She was straining very hard. After examining the uterus, which was protruding about eight inches, I operated, beginning in the cervix and cutting back about four inches. It was like a ring about two inches thick.

I introduced my hand, but found nothing but the intestines. I told the owner that the uterus was ruptured, that there was no chance to save the cow and that it would be best to kill her. To this he objected. Just as I started to leave, the cow died. I held a postmortem examination and found a fully developed calf that appeared to have been dead several days. The uterus contained a rent about fourteen inches long. The calf and membranes had passed through the rupture into the intestinal cavity. The margins of the wound were sloughing.

From the history, I concluded the rupture had occurred about a week previous when the cow had been run over by a mule.

B. L. TERRELL.

Dresden, Tenn.

*Read before the Tennessee Veterinary Medical Association.

EXPERIENCES IN TUBERCULIN TESTING

I have been a constant reader of the Journal for many years and am very much interested in anything that spells progress. In your last issue I note the criticism of Prof. Delos L. James of the Massachusetts Agricultural College by Dr. F. G. Ruder of Amherst, Mass. I think Dr. Ruder is right in his criticism and that when one has had a lot of experience in testing and posting tuberculous cattle a word from him has some value.

I am going to supplement the article of Dr. Ruder by giving a concrete example of a test made recently on a herd in this state. First a little history will be necessary. The owner of this herd has been in the dairy business for over 20 years and has supplied milk to one of the fair sized cities in this state. He has fought the test and when a test was made has been able, until recently, to have part of the herd on another place, so all of the herd was not tested, as was supposed. Notwithstanding this fact a large number of reactors have been taken out of this herd in past years.

A few days ago I tested the whole herd, which consisted of about 40 cows, 15 calves and 48 young animals; 103 in all. There were 32 reactors, 20 being cows, 5 two-year-olds, and 7 calves. Careful postmortem examinations were made of all these reactors and well defined lesions of tuberculosis were found in every case; five of the cows showing generalized cases.

The most interesting fact was that seven of the 15 skim-milk calves were tuberculous. If the milk was not the source of the infection, it would be hard to account for the infection in these calves.

In all these cows not one had a lesion of the udder, and only one of the two-year-old heifers had lesions of the supermam-

mary lymph-glands and she was not milking. In other words if these facts prove anything, it is not necessary that the udder be directly or indirectly infected to make it possible to have the bacilli in the milk. One calf, barely four weeks old, had a marked lesion of one lung and of a mediastinal lymph-gland. None of the calves were over five months old.

As a sidelight to this test I met a man on the train on my return trip from making this test, and we got to talking about the case and he told me he was selling out and moving to Arizona for his health. His mother for many years was served with milk by the owner of this herd and it was a part of his daily food when he was a boy. This may have no connection with the facts set forth in this article, but one is entitled to have his own opinion.

C. C. WALKER.

Helena, Mont.

PLENTY OF WATER AND SALICYLIC ACID FOR COLIC IN THE HORSE

In gastric indigestion, I resort to stomach lavage, washing out as much food as possible, then give two No. 10 capsules of salicylic acid. Then pump five or six gallons of weak salt water into the stomach and let it remain. In half an hour I give a physic ball. If the animal is in much pain, I give two ounces of chloral hydrate.

In colic due to impaction of the bowel, pass the stomach-tube and pump in six, eight or ten gallons of warm water in which a teacupful of salt has been dissolved. Follow with two ounces chloral hydrate. I never use arecolin, eserin or pilocarpin in colic cases.

You will find that if you will discard hypodermic treatment for evacuating the bowels, and use the stomach-tube and pump and plenty of warm salt water, you will cure ninety-five per cent of your colic cases and make a hit with your client.

I use a small caliber tube, and pass it through the left nostril. Water and salt are cheap and get results, and results are what your client wants. He will also tell his neighbors, and it doesn't sound good to have him tell his neighbors that you gave his horse a hypodermic, and he slobbered at the mouth like a mad dog and died ten or fifteen minutes afterward in awful agony.

I am an unbeliever in the theoretical matter we read in a lot of textbooks. Some of the authors I fear have never treated a case of colic.

W. R. MORGAN.

Eminence, Ky.

UNITED STATES ARMY CITATION

LIEUTENANT COLONEL JOHN H. GOULD, U. S. A. For exceptionally Meritorious and Conspicuous Services as CHIEF VETERINARIAN of the 3rd ARMY, American Expeditionary Forces, in testimony thereof, and as an expression of appreciation of these services, I award him this Citation.

JOHN J. PERSHING,
Commander-in-Chief.

Awarded on April 15, 1920.

It is a source of satisfaction to learn that Captain John H. Gould, now on duty as a student officer at the General Staff College, has recently been awarded the citation as above noted.

Captain Gould (then Major, V. C., N.

A.) went overseas as Division Veterinarian, 88th Division, sailing from Quebec, Canada, July 20, 1918. He was transferred to the 2nd Army as Chief Veterinarian November 29, 1918, and served in this capacity until this army was officially disbanded on April 15, 1919. He was then transferred to the 3rd Army for duty

as Chief Veterinarian with station at Coblenz, Germany; promoted to the grade of Lieutenant Colonel, U. S. A., on May 12, 1919; relieved from duty as Chief Veterinarian, 3rd Army, on August 18, 1919, and ordered to return to the United States. Upon arrival in this country he was selected for duty as a student officer at the General Staff College, Washington, D. C.

Captain Gould also enjoys the honor of having been elected First Vice President of the American Veterinary Medical Association at the New Orleans meeting last November.—*The Bulletin S. G. O.*

BLACKLEG CURED BY SERUM

Blackleg can positively be cured just as surely as diphtheria in the human family.

I have demonstrated this fact so absolutely to my clients in different parts of my territory that they call me now to treat a calf suffering from blackleg as readily as they would to treat a colic case or an impaction of the rumen in a cow.

In the treatment of blackleg, I administer Cutter's anti-blackleg serum, as I know this product is positive in its action.

When I am called to treat a case of blackleg if the animal is down and badly infected, I administer intravenously 150 mils of anti-blackleg serum, then 200 mils subcutaneously and 10 mils of hydrocarbon camphorated oil. In one hour, I give another 10 mils of camphorated oil intramuscularly. I use Jensen-Salsbery hydrocarbon camphorated oil. I use a 50-mil syringe to administer anti-blackleg serum, and have not failed to cure a single case treated in this way. My success is due to the large dose of serum, a smaller dose is useless. If anyone using this treatment desires to change the dosage of serum, he should change it for a larger dose.

If the patient is down, don't forget the intravenous route, first shot 150 or 200 mils, and 10 mils camphorated oil intramuscularly. Repeat the camphor in one hour. The above dose of serum is all that is required.

In treating a calf in the first stages of blackleg, when lameness first shows up with crepitation under the skin of the affected quarter, give 250 mils of serum subcutaneously. The cure is positive. If any readers are in doubt about this treatment, write the following parties for verification of my statements.

Hon. Newton Bright, State Senator, Eminence, Ky., cured two yearling steers for him.

Pryor New, Bethlehem, Ky., Star Route, one case.

Lloyd Roberts, Smithfield, Ky., R. F. D. No. 2, one case.

Giltner Bros, Eminence, Ky., breeders of Hereford cattle; cured two yearling bulls for them valued at $500.00 each.

All of these calves had been previously vaccinated by the owners with pill, blackleg vaccine.

I always condemn this form of vaccination as it is dangerous and unreliable. I use blackleg aggressin.

W. R. Morgan.

Eminence, Ky.

TURPENTINE INTRAVENOUSLY UNIFORMLY SUCCESSFUL IN PURPURA

Of late years I have had uniform and quick success in treating this disease with injections of turpentine into the jugular. Two to three drams of the best spirits of turpentine are used once daily until the swellings disappear, usually requiring four to ten days. Great care must be used in making these injections, since in purpura large swellings often follow a slight irritation, and if these swellings occur along both jugulars it is impossible to carry out the treatment. A small needle, carefully sterilized, is inserted into the vein; the turpentine with an equal amount of warm water is drawn into a glass syringe, which is then fitted carefully to the needle and injected slowly into the vein. The syringe is then removed from the needle which remains in the jugular. Another syringe containing one or two ounces of warm normal saline solution is fitted onto the needle and injected into the vein to make sure that not even the smallest drop of turpentine will get into the tissues when the needle is withdrawn.

The only observable action of turpentine administered in this way is diuretic and stimulant.

F. B. Ford, A. V. C., 88.

New Orleans, La.